OECD Multi-level Governance Studies

Aligning Regional and Local Budgets with Green Objectives

SUBNATIONAL GREEN BUDGETING PRACTICES AND GUIDELINES

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BETTER POLICIES FOR BETTER LIVES

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Foreword

Green budgeting is a concrete, practical tool that governments, at all levels, can use to mainstream climate and environmental action within budgetary decisions and broader policy making, and to monitor progress towards achieving environmental and climate goals.

Building on the work developed by the OECD Paris Collaborative on Green Budgeting since 2017 as well as the analysis of existing green budgeting initiatives at the regional and local levels, the OECD Centre for Entrepreneurship, SMEs, Regions and Cities (CFE) and the European Commission (DG REGIO) have joined forces to prepare this report on *Aligning Regional and Local Budgets with Green Objectives: Subnational Green Budgeting Practices and Guidelines*.

This report is part of a broader joint OECD-EC project on Measuring and Enhancing Subnational Government Finance for Environment and Climate Action in OECD and EU Countries, which started in October 2020. It identifies the opportunities and challenges of green budgeting for regions and municipalities, provides an overview of current green budgeting approaches, methodologies and practices at the subnational level and proposes a set of concrete recommendations for supranational bodies, national governments and subnational governments grouped around six key guidelines.

The report reflects discussions, deliberations and findings from two virtual workshops of experts (13 October and 10 November 2021, held during COP26), as well as the outcome of two years of engagement and dialogue with the region of Brittany and the city of Venice, the two case studies of this work.

This work is part of OECD programme on Financing Climate Action in Regions and Cities. It was prepared under the leadership of the OECD Regional Development Policy Committee, with support from the RDPC Expert Group on Multi-Level Governance for Regional Development. The report was submitted to Regional Development Policy Committee delegates for comments under written procedure in May 2022 [CFE/RDPC(2022)10]. The report is published in the OECD Multi-Level Governance Studies.

The final publication reflects RDPC delegates' comments and is published under the authority of the OECD Secretary General.

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The report was led and co-ordinated by Isabelle Chatry, Head of Unit of "Decentralisation, Subnational Finance and Infrastructure" under the supervision of Dorothée Allain-Dupré, Head of the Regional Development and Multi-Level Governance Division in CFE. The report was drafted by Isabelle Chatry and Kate Power from CFE and Dominique Soulier, expert in local finance and lecturer at Sciences Po Paris and University Paris-Dauphine with inputs from Youssef Bouri and Charlotte Lafitte (CFE). The report benefitted from inputs and comments from Nadim Ahmad, Deputy Director of CFE, Margaux Lelong of the OECD Public Governance Directorate which co-ordinates the Paris Collaborative on Green Budgeting (PCGB), and Mauro Migotto in the OECD Environment Directorate.

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Abbreviations and acronyms

ADEME	*Agence Française pour la transition écologique* (French agency for Ecological Transition)
APAT	*Agenzi per la protezione dell ambiente e per i servizi tecnici* (Agency for Environmental Protection and Technical Services)
CCFLA	Cities Climate Finance Leadership Alliance
CEPA	Classification of Environmental Protection Activities
CLEAR	City and Local Environmental Accounting and Reporting
COFOG	Classification of the Functions of Government
COP	Conference of Parties
CoR	European Committee of the Regions
CRUMA	Classification of Resource Use and Management Activities
DAC	Development Assistance Committee
EC	European Commission EU European Union
EHS	Environmentally harmful subsidies
ETR	Environmental tax reform
GHG	Greenhouse gas
I4CE	Institute for Climate Economics
IMF	International Monetary Fund
INSEE	*Institut National de la statistique et des études* (National Institute of Statistics and Economic Studies)
ISPRA	*Istituto Superiore per la Protezione e la Ricerca Ambientale* (Italian Institute for Environmental Protection and Research)
ISTAT	Italian National Statistical Agency
JRC	Joint Research Centre
NACE	*Nomenclature statistique des activités économiques dans la Communauté européenne* (Statistical Classification of Economic Activities in the European Community)
OECD	Organisation for Economic Co-operation and Development
OGCB	Paris Collaborative on Green Budgeting
PCAET	*Plan Climat Air-Énergie Territorial* - PCAET (Territorial Climate-Air-Energy Plan)
PFM	Public financial management
PPI	*Plan Pluriannuel d'investissement* (multiannual investment plan)
RRF	Recovery and Resilience Facility SDG Sustainable Development Goal
RRP	Recovery and Resilience Plan
SAT	Self-Assessment Tool
SDGs	Sustainable Development Goals
SEAP	Sustainable Energy Action Plan
SECAP	Sustainable Energy and Climate Action Plan
SERIEE	*Système européen pour le rassemblement des informations économiques sur l'Environnement* (European system for the collection of economic information on the environment)
SNBC	*Stratégie Nationale Bas carbone* (French National Low-Carbon Strategy)
SNGs	Subnational governments
SRADDET	*Schéma Régional d'Aménagement, de Développement Durable et d'Égalité des Territoires* (Regional Scheme for Spatial Planning, Sustainable Development and Territorial Equality)

UN	United Nations
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change

Executive summary

Fiscal policy is one of the most powerful and effective tools that policy makers have at their disposal for resourcing and implementing co-ordinated policy action to address climate change, biodiversity loss, and environmental degradation. This new study, part of a joint OECD-European Commission project on "*Measuring and Enhancing Subnational Government Finance for Environment and Climate Action in OECD and EU Countries*", looks at the potential of green budgeting for subnational governments to help achieve environmental and climate objectives.

At the national and subnational levels, green budgeting is a relatively new area of research and practice in many OECD countries, which received a strong boost in 2017 with the establishment of the OECD Paris Collaborative on Green Budgeting (PGCB). The interest in green budgeting has been accentuated at all levels of government by the push for a post-pandemic green recovery, and the accompanying need to identify and prioritise green investments.

Green budgeting is defined as "using the tools of budgetary policy making to help achieve environmental and climate objectives". It is a concrete, practical tool that governments can use to mainstream climate and environmental action within budgetary decisions and broader policy making, and to monitor progress towards achieving environmental and climate goals, a central objective of the Paris Agreement.

Green budgeting is particularly relevant for regional and local governments given the important role they play in tackling climate change and catalysing the transition to a carbon-neutral economy. Regions and cities have jurisdiction over key policy areas relevant to the transition and play an important role in catalysing the green transition through their spending, investment, and revenue raising decisions. Indeed, all spending decisions have an environmental and climate impact, be it positive, neutral or negative. Subnational governments can use green budgeting to align their fiscal policies with their green objectives by identifying, quantifying, and tracking their impacts to inform the budgetary and policy decision-making processes.

Green budgeting presents several opportunities for subnational governments. Initiating a green budgeting approach can align financial decisions with environmental and climate goals. Green budgeting also helps governments prioritise low-carbon and resilient investment projects and spending. Green budgeting tools can also assist subnational governments to mobilise additional sources of public and private finance to bridge funding gaps and help respond to a growing demand for transparency and accountability in subnational government public action.

However, adopting a green budgeting approach also poses several challenges for subnational governments that can fit into four broad categories: methodological, operational, resource, and political challenges. A key methodological challenge is the lack of proven methodologies adapted to the specific budgeting contexts of subnational governments. Resource challenges can be further categorised into human and financial resources challenges. A key operational challenge that subnational governments may face in implementing a green budgeting practice is establishing a dedicated organisational structure based on horizontal co-ordination amongst departments. Ensuring sustained, high-level support for green budgeting from both administrative and elected officials, involving territorial stakeholders (citizens,

businesses, partners, etc.) and reconciling social and green objectives are key political challenges. The last challenge is the need for a green budgeting practice to continue over time and not become a one-off exercise.

Green budgeting is not a silver bullet and is one of several tools that subnational governments have at their disposal, such as regulatory policies or environmental and land-use planning tools. Green budgeting is most effective when it is used in combination and co-ordination with these other actions.

There is no one-size-fits-all approach to green budgeting. This is particularly true for the subnational level because budgeting and accounting systems differ substantially from one country to another and across levels of subnational governments. A stocktake of existing subnational green budgeting practices in OECD and EU countries found that green budgeting encompasses a variety of practices including carbon budgets, ecoBudgets, climate budgets, environmental and climate impact analyses, green budget tagging, and more. Despite this heterogeneity, it is possible to identify some common features among existing practices.

Among the countries identified in the stocktake as having subnational green budgeting exercises, France stands out for having a large number of green budgeting exercises at all levels of subnational government: regional, departmental, and municipal. Other interesting exercises were identified in Austria, Italy, Norway, Spain and the United Kingdom. At the regional level, there are a variety of green budgeting methodologies being used. For example, the French region of Brittany started a green budgeting process to tag expenditure according to its positive or negative impact on regional climate adaptation and mitigation objectives, an exercise that has highlighted the challenges in implementing green budgeting as well as the elements necessary to achieve success. In contrast, at the municipal level, most municipalities, regardless of the country, were found to have based their green budgeting practice on one of two methods: the climate budgetary assessment (climate budget tagging) or the climate budget approach (a climate governance system that integrates emissions impact assessments of proposed and adopted expenditure items into decision-making processes). The case study of the city of Venice shows that there is a great interest in developing new budgeting practices and better linking climate science and related indicators with budgetary decision-making processes, although the city faces considerable challenges in doing so, that need to be overcome through increased financial and technical support.

The OECD has developed a set of six guidelines for regions and cities to use in developing and launching their own subnational green budgeting practice. The purpose of these guidelines, which are accompanied by recommendations for supranational bodies, national and subnational governments and a self-assessment tool, is to help subnational governments, regardless of their type, level of responsibility or their size, to put in place the conditions necessary to launch or strengthen a green budgeting practice, and ensure it endures over time.

- **Guideline 1**: Conduct a diagnostic of local environmental and climate challenges as a prerequisite to launching a green budgeting practice.
- **Guideline 2**: Ensure strong, high-level involvement and support from both the administrative and elected sides of government.
- **Guideline 3**: Ensure the practice has a robust, shared scientific basis to facilitate public trust and ensure the practice can adapt to changing scientific evidence.
- **Guideline 4**: Adopt a step-wise approach to implementing green budgeting in order to learn from previous steps and reinforce the alignment of the practice with local strategic priorities.
- **Guideline 5**: Integrate the green budgeting practice into existing public financial management procedures and tools to help ensure the practice endures.
- **Guideline 6**: Include revenues within the scope of the green budgeting practice to ensure the entire budget aligns with green objectives.

Assessment and recommendations

Climate change, biodiversity loss, and widespread environmental degradation are imminent threats to our planet and societies. Addressing these threats requires unprecedented co-ordination of policy action among and within all levels of government. Fiscal policy is one of the most powerful and effective tools that policy makers have at their disposal for resourcing and implementing co-ordinated policy action. Green budgeting is defined by the Paris Collaborative on Green Budgeting (PCGB) as "using the tools of budgetary policymaking to help achieve environmental and climate objectives. Therefore, it can help governments to mainstream climate and environmental action within budgetary decisions and broader policy-making, and to monitor progress towards achieving environmental and climate goals (OECD, 2020[1]). As such, it also contributes to "making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development", a central objective of the Paris Agreement (UNFCCC, 2015[2]).

Part of a joint OECD-European Commission project on Measuring and Enhancing Subnational Government Finance for Environment and Climate Action in OECD and EU Countries, this report identifies the opportunities and challenges of green budgeting for regions and municipalities and provides an overview of green budgeting current approaches and methodologies. A stocktake of existing subnational green budgeting practices in the OECD and European Union (EU) countries shows that it is still in its infancy but the interest and practices are growing. Building on this stocktake as well as the insights of two case studies, one with the region of Brittany (France) and one with the city of Venice (Italy), the report proposes a set of concrete recommendations for supranational bodies, national and subnational governments grouped around six guidelines. These guidelines are accompanied by a self-assessment tool to assist any region or municipality in identifying its strengths and potential gaps for starting a green budgeting practice or improving an existing one.

Key findings

Subnational green budgeting is new but progressing

At the national level, green budgeting is a relatively new area of research and practice in many OECD countries, which received a strong boost in 2017 with the establishment of the OECD Paris Collaborative on Green Budgeting in partnership with France and Mexico (OECD, 2020[1]). The growing interest in green budgeting has been accentuated by the push for a post-pandemic green recovery, and the accompanying need to identify and prioritise green investments. For example, In the European Union, the requirements set out by the European Commission in its Recovery and Resilience Facility (RRF) that 30% of the Facility's allocations be directed towards climate change is likely to increase the number of European countries using green budgeting as they look for ways to show they have met this requirement.

At the subnational level, there has also been a recent surge in interest in green budgeting. For example, within Europe, the European Committee of the Regions recently started a discussion within its Commission for the Environment, Climate Change and Energy to prepare an opinion on "the implementation of green

budgets at local and regional levels" to be adopted by the Committee in June 2022 (European Committee of the Regions, 2022[3]).

Green budgeting is particularly relevant for regional and local governments given the important role they play in tackling climate change and catalysing the transition to a carbon-neutral economy. This is because regions and cities are major greenhouse gas emitters while also having jurisdiction over key policy areas relevant to the transition such as land-use planning and zoning, housing development, waste treatment, and more. Subnational governments also play an important role in catalysing the green transition through their spending, investment, and revenue raising decisions. In 2020, subnational governments in the OECD accounted for 37% of all public spending, 55% of all public investment, and 32% of all tax revenues, on average (OECD, 2022[4]). These expenditure, investment and revenue decisions have an environmental and climate impact, be it positive, neutral or negative. Green budgeting is a concrete, practical tool that subnational governments can use to align these fiscal decisions with their green objectives by identifying, quantifying, and tracking their impacts and integrating the evidence gathered into budgetary and policy decision-making processes.

The ins and outs of green budgeting at the subnational level

Green budgeting is a concrete, practical tool that subnational governments can use to integrate climate and environmental considerations throughout the budgetary process, from the initial drafting phase through to the budget vote and ex-post reporting. Integrating environmental and climate concerns fully into the budgetary process effectively complements the range of environmental and climate tools available at the subnational level.

Green budgeting presents several opportunities for subnational governments, while also posing a number of challenges that need to be anticipated and addressed.

Initiating a green budgeting approach can help to align financial decisions with environmental, and climate goals and indeed can also foster cross-departmental collaboration within a subnational government. Green budgeting seeks to facilitate and improve the rationality of decisions, drawing on robust scientific assumptions, data and indicators. It also contributes to improving the evaluation of public policies.

Green budgeting also helps governments to prioritise and select low-carbon and resilient investment projects and spending, which is made all the more important in the context of the post-pandemic green recovery and the unprecedented influx of resources for "green" investment.

Green budgeting tools can also assist subnational governments to identify funding gaps associated with achieving their green objectives and to mobilise additional sources of public and private finance to bridge these gaps, such as green funds and subsidies, green loans and green bonds.

Beyond its use as a prioritisation and decision-making tool, green budgeting can also help respond to a growing demand for transparency and accountability from subnational government, especially from civil society, an important aspect that contributes to increasing citizens' trust in government. It promotes the emergence of dialogue between environmental, economic and social actors, which did not always exist, despite the interdependence of environmental, economic, and social issues. This also helps to communicate with all stakeholders and partners at the international, national, and subnational levels on progress being made to reach green targets.

Green budgeting also raises several challenges for subnational governments that can fit into four broad categories: methodological challenges, operational challenges, resource challenges, and political challenges. The degree of difficulty that these challenges pose varies among subnational governments.

The key methodological challenge related to green budgeting at the subnational level is the lack of proven methodologies adapted to the specific budgeting contexts of subnational governments. Regions and municipalities do not have the same expenditure and revenue competences as national governments, nor

as each other, and there is considerable variation in these competences between countries. As a result, it is not always possible for subnational governments to simply adopt an existing national-level green budgeting methodology. Other methodological challenges relate to adapting existing accounting and reporting tools and ensuring the methodology is transparent and dynamic, such that it can adapt to changing scientific evidence over time.

Resource challenges can be further categorised into human resources challenges (e.g. not having personnel with necessary climate and environmental expertise) and financial resources challenges (e.g. not having the budget available to hire additional staff while existing staff are overburdened). It can also relate to the need to instil climate and environmental awareness throughout the subnational administration, including elected representatives and administrative staff from all departments, as green budgeting should mobilise the entire organisation to be effective.

Potential operational challenges that subnational governments may face in implementing a green budgeting practice include establishing a dedicated organisational structure based on horizontal co-ordination amongst departments and associating key public and private stakeholders from outside the subnational government in the process. Depending on existing co-ordination structures within an administration, setting up a dedicated organisational structure and fostering horizontal co-ordination may pose less of a challenge for some subnational governments than others.

A notable political challenge is ensuring sustained, high-level support for green budgeting from both administrative and elected officials. Green budgeting necessitates fundamental changes in the functioning of the regional or municipal government and in the relationships of the government with its territorial stakeholders (citizens, businesses, partners, etc.). Such changes cannot take place without the support of government officials, who at the same time can resist these changes if they are too burdensome, uncoordinated, and politically risky.

Ensuring follow-up over time in order to identify trends and prevent green budgeting from becoming a one-off exercise is also particularly challenging. Green budgeting practices should be developed step-by-step in order to find the right balance between feasibility and comprehensiveness and to integrate lessons learned along the way.

Overall, it is important to note that green budgeting is a means to an end, not an end in itself. Green budgeting will not ensure the green transition; however, it can help to achieve the transition's goals. Put plainly, green budgeting is not a silver bullet. It is one of several tools that subnational governments have at their disposal for catalysing the green transition together with other instruments, such as regulatory policies, or environmental and land-use planning tools. Green budgeting is most effective when it is used in combination and co-ordination with these other government instruments and actions.

Current approaches in green budgeting: international, national and subnational perspectives

A diversity of green budgeting practices has emerged in the past two decades at both national and subnational levels. Concurrently, international organisations working on the topic have introduced frameworks to support governments in implementing green budgeting, and several fora have been established to allow for collaboration and sharing of knowledge and best practices. A brief history of green budgeting shows that it remained relatively unexplored until the early 2010s. It gained momentum following the Paris Agreement in 2015 and the One Planet Summit in 2017, where the OECD Paris Collaborative on Green Budgeting was launched. As interest in the topic has continued to grow, organisations such as the OECD, the International Monetary Fund (IMF) and the European Commission have developed green budgeting frameworks. Green budgeting tools are being progressively used, adapted, and developed further by governments at all levels, including green budget tagging, environmental tax reform, climate and environmental impact assessments and green budget statements.

A stocktake of existing subnational green budgeting practices in OECD and EU countries

In recent years, as an ever-growing number of regions and cities have set ambitious climate and environmental targets, the interest in subnational green budgeting has also grown steadily as has the number of subnational governments implementing green budgeting practices. The post-COVID-19 recovery plans, strongly centred on environmental and climate issues, certainly contribute to this trend. For some countries, new green budgeting practices are linked to other priority budgeting methods such as gender budgeting or pro-poor budgeting that are complementing traditional incremental budgeting practices.

There is no one-size-fits-all approach to green budgeting. There is a need for different approaches to reflect the differences in the scale and type of climate and environmental challenges faced by different subnational governments depending on their location (e.g. urban vs rural, coastal vs mountainous areas, etc.) and characteristics (e.g. demographic and geographic size). Subnational government responsibilities also vary across countries and across levels of government (e.g. regions vs municipalities). The climate and environmental impact of subnational government policies and actions differs according to the level of decentralisation and the assignment of subnational government responsibilities and revenues. In federal and decentralised countries, spending and revenue decisions are likely to have a higher impact on the green transition than in more centralised countries, where local governments play a more minor financial role.

Moreover, there is a singular green budgeting approach for subnational governments because budgeting and accounting systems differ substantially from one country to another, and even within countries, across levels of subnational governments. This heterogeneity in terms of accounting and budgetary systems is to be expected given the extreme diversity of multi-level governance systems across countries.

The trend in adopting green budgeting is not necessarily limited to subnational governments with large budgets; although the issues differ depending on the size of territories and the scope of responsibilities, implementing green budgeting in small subnational governments is equally of interest, and can be easier given the more modest size of the budget.

A stocktake of existing subnational green budgeting practices in OECD and EU countries found that green budgeting encompasses a variety of practices including carbon budgets, ecoBudgets, climate budgets, environmental and climate impact analyses, and more. These practices also vary in terms of coverage. Some only assess capital expenditures while others include current expenditures. In terms of green objectives, some practices focus only on climate change adaptation and mitigation while others include broader environmental objectives such as biodiversity or water and air pollution. Moreover, some practices combine green budgeting with other priority budgeting approaches such as SDG budgeting, social objectives and gender budgeting. In some cases, these existing subnational practices were inspired by national green budgeting exercises and methodologies, and in other cases they are stand-alone.

Among the countries identified in the stocktake as having subnational green budgeting exercises, France stands out for having a large number of green budgeting exercises at all three levels of subnational government: regional, departmental, and municipal. Other interesting exercises were identified in Austria, Italy, Norway, Spain and the United Kingdom. Although outside the scope of the stock-take, subnational green budgeting practices were also identified in non-OECD and EU countries, particularly in Asia.

At the regional level, there are a variety of green budgeting methodologies in use. In contrast, at the municipal level, most municipalities, regardless of the country, were found to have based their green budgeting practice on one of two methods that they then adapted to their specific context and policy aims: the climate budgetary assessment (climate budget tagging) or the climate budget approach (a climate governance system that integrates emissions impact assessments of proposed and adopted expenditure items into decision-making processes).

Two case studies: Brittany (France) and Venice (Italy)

The French region of Brittany began working on developing its own green budgeting process at the end of 2020. These efforts led to the development of a pilot climate budget tagging methodology that was tested on the region's 2020 closed accounts. Publications and methodological support from the Institute for Climate Economics (I4CE), as well as the Region's participation in a green budgeting working group consisting of other interested French regions, facilitated this experimentation. This pilot methodology is now being consolidated by the region in order to be replicated in the 2023 draft budget. The exercise has highlighted the operational, methodological, political, and organisational challenges for implementing green budgeting at the regional level as well as the elements necessary to achieve success.

The city of Venice, Italy is working towards further integrating climate and environment considerations into its budget. Though not currently engaged in a green budgeting process, the municipality has shown interest in developing new budgeting practices and increasing links between climate and environmental science, indicators, and the budgetary decision-making processes. However, there are some considerable challenges faced by the municipality due to its unique climate change vulnerabilities and financial constraints. The approach must therefore be closely linked with other ongoing regional and national climate initiatives that the municipality is a part of, to enhance synergies and avoid creating additional human and financial resource burdens.

Six key guidelines for subnational green budgeting

The stocktake of existing subnational green budgeting practices in the OECD and EU, and the two case studies of Brittany and Venice, provide valuable insights into the prerequisites and mechanisms necessary to develop and implement a green budgeting practice.

The knowledge gathered from these outputs is summarised below as a set of six key guidelines for regions and cities to use in developing and launching their own subnational green budgeting practice. The purpose of these guidelines is to help subnational governments, regardless of their type, level of responsibility or their size, to put in place the conditions necessary to launch or strengthen a green budgeting practice, and make it a long-term practice. The guidelines are accompanied by recommendations for supranational bodies, national and subnational governments. With rapidly growing interest in subnational green budgeting in OECD and EU countries, more methodological, financial, and technical support is needed to ensure that regions and cities of all sizes can make full use of the tool. Supranational bodies and national governments have a key role to play in providing this support and creating an enabling environment for subnational governments to adopt green budgeting.

Guideline 1: Conduct a diagnostic of local environmental and climate challenges as a pre-requisite to launching a green budgeting practice

Green budgeting practices must be based on a holistic diagnosis of regional and local environmental and climate challenges that specify the subnational government's green objectives, the financial means required to implement these objectives, and the indicators that will be used to monitor the progress in achieving them.

To carry out these diagnoses and define these indicators, subnational governments must be able to rely on clear assignments of responsibilities, have sufficient financial and technical resources and have access to scientific information adapted to their characteristics. Robust governance tools are also needed to manage all the internal and external interactions linked to the green budgeting project.

- ► Prepare a transversal territorial diagnosis that is consistent across government levels and in line with national and regional planning schemes.
- ► Use the diagnostic to define specific objectives for the territory as well as associated performance indicators.
- ► Include all stakeholders in the process of defining green objectives and performance indicators.

Guideline 2: Ensure strong, high-level involvement and support from both the administrative and elected sides of government

Strong political and administrative involvement is necessary to start a green budgeting practice. The involvement of elected officials should be formal and public in order to give the project the necessary political weight. The involvement of the administration at the highest level is also essential to ensure that the necessary human and financial resources are in place to implement the green budgeting project.

- ► Support green budgeting practices through strong political involvement and support.
- ► Ensure the implementation of the necessary means thanks to high-level administrative management.

Guideline 3: Ensure the practice relies on a robust, shared scientific basis to facilitate public trust and ensure the practice can adapt to changing scientific evidence

A shared scientific culture based on sound climate and environmental assumptions and evaluation methodologies is essential to enable the development of green budgeting at the sub-national level. International organisations and national governments have a role to play in disseminating this culture, notably by continuing to develop green and transitional taxonomies adapted to local and regional authorities, and by supporting networks of experts and research on these subjects. For their part, local and regional authorities should improve the level of training of staff and elected representatives in environmental and climate matters and be very transparent about the green budgeting approach undertaken and the methodologies used.

- ► Develop shared repositories of climate and environmental science and assessment methodologies.

Guideline 4: Adopt a step-wise approach to implementing green budgeting in order to learn from previous steps and reinforce the alignment of the practice with local strategic priorities

Green budgeting practices should be implemented gradually, in order to take into consideration the priorities of the subnational government, to capitalise on foreign or national experiences, to put in place the necessary elements for the practice, to involve all stakeholders, and to adjust the government's broader budgetary policies to its climate and environmental objectives. This realistic approach should nevertheless

be accompanied by an ambitious implementation programme, adapted to local issues, the financial means of the subnational government and its technical capacity.

- ► Gradually widening the scope of green budgeting helps get the process started.
- ► Cross green budgeting with the government's other priority budgeting approaches and green initiatives.

Guideline 5: Integrate the green budgeting practice into existing public financial management procedures and tools to help ensure the practice endures

Budgetary procedures and tools need to be adapted to incorporate the green budgeting dimension. National governments can help by adapting the granularity of public accounting requirements or adjusting the format of budgets to allow for better identification and presentation of the climate and environmental impact of expenditures and revenues.

At the subnational level, internal procedures need to be adjusted to integrate green budgeting at all stages of the budgetary process with, if necessary, the implementation of new governance mechanisms to involve all stakeholders in the process. Internal and possibly external audits can help to ensure the robustness of the procedures and to reassure stakeholders of the quality of the work.

- ► Budget procedures and tools must be adjusted to integrate the green budgeting approach.
- ► Integrate green budgeting into internal and external audit procedures.

Guideline 6: Include revenues within the scope of the green budgeting practice to ensure the entire budget aligns with green objectives

Although there is often little room for manoeuvre on the revenue side at subnational level, green budgeting should also cover the revenue side of subnational budgets. The first step is to measure the resources needed to cover climate and environment-related current and capital expenditure, and to ensure that all available funds, both traditional and innovative, are mobilised. Green budgeting also helps to ensure that the structure of revenues is in line with the subnational governments' green strategy, by analysing the overall environmental and climate impact of elected officials' funding choices.

- ► Ensure sufficient permanent funding and the mobilisation of all available green revenue sources for climate and environmental action.
- ► Analyse the environmental and climate impact of revenue sources.

References

European Committee of the Regions (2022), “Draft opinion: The implementation of green budgets at local and regional levels”, European Committee of the Regions, https://webapi2016.cor.europa.eu/v1/documents/cor-2022-00105-00-01-pa-tra-en.docx/content (accessed on 9 May 2022). [3]

OECD (2022), *Subnational Governments in OECD Countries: Key Data*, OECD, Paris. [4]

OECD (2020), *Paris Collaborative on Green Budgeting: OECD Green Budgeting Framework*, OECD, Paris, http://www.oecd.org/environment/green-budgeting/. [1]

UNFCCC (2015), *Paris Agreement*, United Nations Framework Convention on Climate Change, https://unfccc.int/files/meetings/paris_nov_2015/application/pdf/paris_agreement_english_.pdf. [2]

1 The ins and outs of green budgeting at the subnational level

Green budgeting is a concrete, practical tool that subnational governments can use to integrate climate and environmental considerations throughout the budgetary process, from the initial drafting phase through to the budget vote and ex-post reporting. Integrating environmental and climate concerns fully into the budgetary process effectively complements the range of environmental and climate tools available at the subnational level. Green budgeting presents several opportunities for subnational governments, while also posing a number of challenges that need to be anticipated and addressed.

Climate change, biodiversity loss, and widespread environmental degradation are imminent threats to our planet and societies. Addressing these threats requires unprecedented co-ordination of policy action among and within all levels of government. Budget and fiscal policy can be one of the most powerful and effective tools that policy makers have at their disposal for resourcing and implementing co-ordinated policy action. Green budgeting – using the tools of budgetary policy making to achieve green objectives – can help governments to mainstream climate and environmental action within budgetary decisions and broader policy making, and to monitor progress towards achieving environmental and climate goals.

As underlined by the Paris Collaborative on Green Budgeting launched in 2017 and co-ordinated by the OECD, green budgeting is a crucial step in achieving a central objective of the Paris Agreement – making financial flows on a pathway towards low greenhouse gas emissions and climate-resilient development – as well as of the Aichi Biodiversity Targets and the United Nations' Sustainable Development Goals (OECD, 2020[1]; UNFCCC, 2015[2]).

Green budgeting is a priority-based budgeting approach that centres on using the tools of budgetary policy making to help achieve environmental and climate objectives (OECD, 2021[3]). Green budgeting can be considered as a component of public financial management (PFM), and more specifically the emerging area of green public financial management. PFM refers to the institutional and practical arrangements that facilitate the design and implementation of fiscal policies, while green PFM refers to the adaptation of existing PFM practices to support climate and environmentally-sensitive fiscal policies (Gonguet et al., 2021[4]).

The interest is growing and has been recently reinforced by the strong international push towards a green recovery. Many European countries are poised to adopt green budgeting approaches due to requirements set out by the European Commission in its Recovery and Resilience Facility (RRF). At the subnational level in the European Union (EU), the European Committee of the Regions recently started a discussion within its Commission for the Environment, Climate Change and Energy to prepare an opinion on "the implementation of green budgets at local and regional levels" to be adopted by the committee in June 2022 (European Committee of the Regions, 2022[5]).

This also applies at the subnational level, given the critical role that subnational governments play in the global response to climate change and the transition to a carbon-neutral economy. This involvement is increasingly being acknowledged globally, with the 2015 Paris Agreement and the latest COP agreement, the Glasgow Pact (UNFCCC, 2015[2]; 2021[6]). In fact, regional and local governments often have jurisdiction over key policy areas relevant to the transition such as housing development, land-use planning, transportation, wastewater treatment, and waste management. Regional and local governments can act proactively to mitigate and adapt to the negative impacts of a changing climate through their local regulations and policies. This includes developing environmental protection policies, and more generally, mainstreaming environmental and climate considerations throughout the entire subnational policy framework and policy decision-making processes. This also includes making *regional and local* financial flows consistent with a pathway towards low greenhouse gas emissions, which can be done by the development of fiscal policies and tools that are consistent with environmental and climate objectives (OECD, 2019[7])

Subnational governments play an important role through their budget, accounting for, on average, 37% of all public spending, 55% of all public investment and 32% of all tax revenue in the OECD in 2020 (OECD, 2022[8]). Subnational governments, through their spending, investment and revenue capabilities, have thus a powerful tool they can leverage to achieve a carbon-neutral, climate-resilient future. The expenditure, investment, and revenue decisions made by subnational governments have an environmental and climate impact, be it positive neutral or negative. Subnational governments can also be key funders of climate action within their jurisdictions, in particular key investors in sustainable infrastructures.

This role is however difficult to measure both at the macro and micro levels, that of the national accounts and that of individual regional and local budgets. There are still many unknowns, first on the amount of expenditure and investment targeted at environmental and climate actions, but beyond, on the direct and

indirect impacts of subnational government revenues and expenditure on the environment. This makes it difficult to track the progress subnational governments are making in their efforts to support environmental and climate action, and take corrective policies to accelerate the green transition.

To help bridge this data and information gap as well as provide some tools to better align fiscal policies with environmental and climate objectives, the OECD and the European Commission have joined forces and carried out a project on Measuring and Enhancing Subnational Government Finance for Environment and Climate Action in OECD and EU Countries. Subnational green budgeting is one of the three pillars of this project, besides more macro-level pillars on tracking climate-significant expenditure and climate revenue tracking. The third pillar on subnational green budgeting provides a more granular analysis of subnational government climate expenditure and revenue using individual budgets. The objective of a green budgeting approach is to use the tools of budgetary policy making to align government budgets, both the revenue and expenditure sides, with climate and environmental objectives (Box 1.1).

The following report is comprised of several elements including an overview of the opportunities and challenges posed by green budgeting for regions and cities, a stocktake of existing subnational green budgeting practices in OECD and EU countries, a set of subnational green budgeting guidelines, and a self-assessment tool (SAT)[1] for regions and cities to use in developing and implementing their own green budgeting exercise.

Box 1.1. The OECD-EC project "Measuring and Enhancing Subnational Government Finance for Environment and Climate Action in OECD and EU Countries"

Subnational green budgeting is one of three pillars of work of the joint OECD and European Commission project "Measuring and Enhancing Subnational Government Finance for Environment and Climate Action in OECD and EU Countries". The project seeks to enhance the measurement, tracking, and mobilisation of subnational public climate finance by innovatively combining three interdependent pillars of work, two at a macro-level and one at a more micro-level:

- **Climate-significant expenditure tracking** – this pillar consists of a high-level approach to tracking and measuring subnational public climate-significant finance flows using aggregate, internationally comparable data from the functional classification of the National Accounts (COFOG). To carry out this tracking, the OECD's 2018 pilot subnational government climate finance methodology was updated and used to populate a new database on subnational climate finance. The findings show that subnational governments accounted for 63% of climate-significant expenditure and 69% climate-significant investment in respectively 33 and 32 OECD and EU countries in 2019 (OECD, 2022[9]).
- **Climate revenue tracking** – this pillar complements the expenditure tracking by providing a compendium of climate-related public revenue sources (grants, loans, funds, contracts, etc.) available to subnational governments in OECD and EU countries. The results of this qualitative analysis shed light on the diversity of climate-related revenue sources available to subnational governments as well as the gaps that exist, providing evidence for recommendations on how, and at what level (state, regional, municipal, etc.), additional climate finance resources should be mobilised. The compendium is available online via an interactive dashboard.
- **Green budgeting –** this pillar zooms in from the macro-level to the micro-level to provide a more granular analysis of subnational government climate expenditure and revenue using individual budgets. The objective of a green budgeting approach is to use the tools of budgetary policy making to align government budgets, both the revenue and expenditure sides, with climate and environmental objectives. Through two case studies – one regional and one municipal – the OECD has developed a set of guidelines and a self-assessment tool for

subnational governments to use in developing and implementing their own green budgeting exercise.

The outcomes of these three pillars are available on the OECD's Subnational Government Climate Finance Hub (the Hub).

Source: OECD (2022[9]), "Subnational Government Climate Finance Tracking", OECD, Paris.

These guidelines and the SAT were also developed based on two case studies, one with the region of Brittany (France) and one with the city of Venice (Italy). The choice of case studies from one region and one municipality in differing countries was deliberate. This was done to ensure the guidelines accounted for the differences in spending, revenue raising, and climate-related competences between regional and municipal governments. Similarly, the choice of subnational governments in two different countries was made specifically to examine how differences in budgeting rules and processes impact the development of green budgeting, and to thus ensure the guidelines could be actionable by subnational governments throughout the OECD, the EU, and elsewhere.

The remainder of Chapter 1 provides an introduction to green budgeting and details the opportunities and challenges that green budgeting presents for subnational governments. The rest of the report is then structured as follows:

- Chapter 2 describes in detail commonly used green budgeting tools.
- Chapter 3 presents the stocktake of existing subnational green budgeting practices in OECD and EU countries. It is broken down by regional and municipal-level practices and focuses on the methodologies used and how individual regions and cities have adapted them.
- Chapter 4 introduces a set of subnational green budgeting guidelines for regions and cities of all sizes to use in launching their own green budgeting practice or enhancing an existing one. Each of the six guidelines is explained in detail with accompanying recommendations for the international, national and subnational levels and examples of good practices in other jurisdictions.
- Chapter 5 presents the case study with the region of Brittany (France). It highlights the green budgeting methodology used by the region in 2021, how it was developed and adapted to the region's context, and what lessons can be drawn for other regions in the OECD and EU.
- Chapter 6 presents the case study with the city of Venice (Italy). It explores in detail the city's history of integrating environmental considerations into its budgetary process and provides an analysis of the steps that could be taken for the city to launch a green budgeting exercise.

Green budgeting: A concrete, practical tool that presents numerous opportunities for subnational governments

In combatting climate change and environmental degradation, the budget is one of the most powerful tools that subnational governments have at their disposal. The budget is the financial expression of the implementation of responsibilities as well as the result of political choices. The process of budgeting is a complex system that requires compliance with standards and norms, to deal with financial constraints (over which local authorities do not always have leeway) and to make political trade-offs. It is during the process of drafting and voting on the budget that a region or municipality has the possibility to measure its financial commitments to the environment, to establish and resource green priorities to integrate green concerns into all budgetary processes and decisions, or put another way, to align current and capital expenditure and revenue with environmental and climate objectives. When this process is combined with other means of action, such as regulatory action, or environmental and land-use planning, it lays the foundation for

future climate and environmental action by all territorial stakeholders. Integrating environmental and climate concerns fully into the budgetary process effectively complements the range of environment and climate tools available at the subnational level. The opportunity that green budgeting offers subnational governments to make full use of their budget to achieve their green objectives provides a strong rationale for them to implement such an exercise.

Adopting a green budgeting approach presents many benefits for subnational governments, with the most salient among these being that it is a concrete, practical tool that subnational governments can use to align their expenditure and revenues with their green objectives and mainstream climate and environmental considerations throughout their budgetary decision-making processes.

Initiating a green budgeting approach **fosters "cross-functional approaches"** within a subnational government by bringing financial, climate, and environmental issues closer together. This reduces siloed thinking about climate and the environment as being only the responsibility of the Department of Environment and **helps to incite a whole-of-government approach to meeting green objectives.** Likewise, green budgetary processes can help regions and cities to take careful account of the potential impact of action in one area to spill over into other policy domains and help to identify needed accompanying decisions by social and territorial measures (OECD, 2020[10]).

Adopting a green budgeting approach helps to **instil a science-based understanding of environment and climate change issues across the administration and among elected officials**, making apparent the importance of integrating climate and environmental considerations into budgetary decisions. Green budgeting facilitates and improves the rationality of decisions that can be made on the basis of scientific assumptions, data and indicators which therefore sheds light on political trade-offs, in an area where there are often numerous unfounded beliefs, symbolism and presumptions.

The green budgeting process also contributes to **improving the evaluation of public policies**. It can assist in the re-design of objectives, timelines and means to achieve these objectives. It thus brings actions in line with intentions.

Green budgeting is **complementary and symbiotic to other priority budgeting exercises**, such as gender, SDG, or pro-poor budgeting. These priority areas are all cross-cutting and interdependent and budgeting for them relies on similar internal operational procedures such that a priority budgeting exercise in one area can enable and strengthen another.

Adopting a green budgeting approach helps subnational governments to **prioritise and select low-carbon and resilient investment and spending**. This is made all the more important in the context of the post-pandemic green recovery and the unprecedented influx of resources for "green" investment at the subnational level. Green budgeting tools such as green budget tagging, climate/environmental impact assessments, and climate/environmental cost-benefit analyses can help decision-makers to make informed decisions on where to spend and invest today to prevent carbon lock-in.

Relatedly, green budgeting **improves the identification of funding gaps** associated with achieving their green objectives and helps subnational governments to **mobilise additional sources of public and private finance** to bridge these gaps. Green budget tagging, for example, can be used to select expenditure items to be funded using green bonds and green loans as has been done by regional governments in Germany (Hessen and North Rhine-Westphalia) or Spain (Andalusia).

As an ever-growing number of regions and cities set ambitious climate and environmental targets, it is increasingly important that they **consistently and transparently communicate to their citizens, stakeholders, and partners on the progress** being made to reach these targets. Using green budgeting, subnational governments can communicate how much they are spending and investing related to climate and the environment, the impact of this expenditure on territorial progress to meeting green targets, and the overall coherency of the government's fiscal and budgetary policy with their stated green objectives. This transparency on the use of public funds helps to hold governments accountable to their citizens and

stakeholders and can contribute to restoring trust in government, a key factor for ensuring the success of the carbon-neutral transition. It thus promotes the emergence of or reinforces the dialogue between, environmental, economic and social actors, that did not always exist while these issues appear to be often interdependent.

It is important to note, however, that green budgeting is a means to an end, not an end in itself. Green budgeting will not ensure the green transition; however, it can help to achieve the transition's goals. Put plainly, green budgeting is not a silver bullet. It is one of several tools that subnational governments have at their disposal for the green transition together with other instruments, such as regulatory policies, public procurement or environmental and land-use planning tools. Green budgeting is most effective when it is used in combination and co-ordination with these other government instruments and actions.

Developing green budgeting poses four main categories of challenges: Methodological, resource, operational and political

In advocating for the widespread adoption of green budgeting at the subnational level, it is important not to overlook the challenges that subnational governments face in launching such practices. Highlighting these challenges helps to identify research and knowledge gaps and to understand where more support, collaboration and co-ordination are needed. The challenges faced by subnational governments in adopting and maintaining a green budgeting practice can, broadly speaking, fit into four categories: **methodological challenges, resources challenges, operational challenges, and political challenges.** The difficulty that these challenges pose varies between subnational governments.

The key **methodological challenge** related to green budgeting at the subnational level is the lack of proven methodologies adapted to the specific budgeting contexts of subnational governments. Regions and municipalities do not have the same expenditure and revenue competences as national governments, nor as each other, and there is considerable variation in these competences between countries. As a result, it is not always possible for subnational governments to simply adopt an existing national-level green budgeting methodology; to get started they need to invest time and resources in adapting this methodology, or another, to their own budgetary contexts. Relatedly, there is also a lack of climate and environmental indicators available at regional and local levels that are commonly agreed upon and that can be used for the green budget assessment as well as for monitoring progress made towards achieving subnational environmental and climate objectives. Another challenge is to combine climate objectives with other environmental objectives, which may not always be aligned. For example, some climate mitigation and adaptation measures may be harmful to biodiversity e.g. the development of renewable energy installations or public transport infrastructure that consume large amounts of land, and have a negative impact on biodiversity (OECD, 2020[11]). Other methodological challenges relate to adapting existing accounting and reporting tools and ensuring the methodology is transparent and dynamic, such that it can adapt to changing scientific evidence over time.

Resource challenges can be further categorised into human resource challenges and financial resource challenges. One challenge is to instil a climate and environmental awareness throughout the local government, including elected representatives and administrative staff from all departments, as green budgeting should mobilise the entire organisation to be effective. In addition, subnational governments, particularly small municipalities, might not have staff with the necessary climate change and environmental expertise needed to implement green budgeting. Similarly, the development and implementation of green budgeting can require a large investment of time and human resources upfront, which can cause an unsustainable increase in workloads for existing staff. Both of these aspects can be exacerbated by a lack of financial resources for subnational governments to hire and train new or existing staff and to invest in their green budgeting practice, for example, through upgrades to existing information management systems.

Potential **operational challenges** that subnational governments may face in implementing a green budgeting practice include establishing a dedicated organisational structure based on horizontal co-ordination amongst departments and associating key public and private stakeholders from outside the subnational government in the process. Depending on existing co-ordination structures within an administration, setting up a dedicated organisational structure and fostering horizontal co-ordination may pose less of a challenge for some subnational governments than others. Another difficulty can arise from the need to implement internal and external auditing procedures, which may be difficult because this in turn implies having the tools and skills necessary for this kind of control. However, implementing such auditing procedures reinforces the robustness and credibility of the green budgeting exercise among both internal and external stakeholders, and limits the risk of being accused of greenwashing. In addition, depending on the scope of a green budgeting practice, it can require an evolution of the budgetary procedures and reporting systems, an overhaul of the subnational government's relations with third parties, and possibly, an adaptation of IT systems to capture the new data necessary for the process.

The fourth category of challenges are **political challenges**. A notable challenge of this category is ensuring sustained, high-level support for green budgeting from both administrative and elected officials. Green budgeting necessitates fundamental changes in the functioning of the regional or municipal government and in the relationships of the government with its territorial stakeholders (citizens, businesses, partners, etc.). Such changes cannot take place without the support of government officials, who at the same time can resist these changes if they are too burdensome, uncoordinated, and politically risky. Support from elected officials is key because even if government budgets are largely drafted by civil servants, the budget is above all a prerogative of elected officials as it is an outward reflection of their political choices and negotiations. Increasing the importance of climate and environmental considerations within the budget construction and arbitration process is therefore a project that must be spearheaded by elected officials and internalised by administrative officials in their working practices. It involves changing mentalities and working methods and accepting possibly imperfect results since the process may take time to produce visible results. Another key political challenge relates to reconciling social and green objectives. Policies and financing mechanisms designed to address climate change can have important distributional impacts, disproportionately affecting low-income populations. This is particularly the case with financing tools that effectively put a price on carbon, such as carbon taxes or congestion charges. Green budgeting should then also make the case for applying an inclusion lens and identifies some of the trade-offs and opportunities between green objectives and inclusive growth objectives, and offer the potential for achieving both climate and inclusion objectives (OECD, 2019[7]).

Finally, there is also a challenge that is overarching and linked to all of the challenges described previously, and that is **the need for a green budgeting practice to continue over time and not become a one-off exercise.** The true benefit of green budgeting comes from identifying trends over time in the alignment of expenditure and investment with green objectives and for this to occur the practice needs to be continuous. The practice must be adapted to the concrete results achieved in terms of climate and environment. It should be viewed as a step-by-step process that needs to find the right balance between feasibility and comprehensiveness.

References

European Committee of the Regions (2022), “Draft opinion: The implementation of green budgets at local and regional levels”, European Committee of the Regions, https://webapi2016.cor.europa.eu/v1/documents/cor-2022-00105-00-01-pa-tra-en.docx/content (accessed on 9 May 2022). [5]

Gonguet, F. et al. (2021), *Climate-Sensitive Management of Public Finances - "Green PFM"*, International Monetary Fund. [4]

OECD (2022), "Subnational Government Climate Finance Tracking", OECD, Paris. [9]

OECD (2022), *Subnational Governments in OECD Countries: Key Data*, OECD, Paris. [8]

OECD (2021), *Green Budgeting in OECD Countries*, OECD Publishing, Paris, https://doi.org/10.1787/acf5d047-en. [3]

OECD (2020), *Inventory of Building Blocks and Country Practices for Green Budgeting: The OECD Framework for Green Budgeting*, OECD, Paris. [10]

OECD (2020), *Paris Collaborative on Green Budgeting: OECD Green Budgeting Framework*, OECD, Paris, http://www.oecd.org/environment/green-budgeting/. [1]

OECD (2020), *Towards Sustainable Land Use: Aligning Biodiversity, Climate and Food Policies*, OECD Publishing, Paris, https://doi.org/10.1787/3809b6a1-en. [11]

OECD (2019), "Financing climate objectives in cities and regions to deliver sustainable and inclusive growth"*, OECD Environment Policy Papers*, No. 17, OECD Publishing, Paris, https://doi.org/10.1787/ee3ce00b-en. [7]

UNFCCC (2021), *Glasgow Climate Pact*, United Nations Framework Convention on Climate Change, https://unfccc.int/documents/310475 (accessed on 17 March 2022). [6]

UNFCCC (2015), *Paris Agreement*, United Nations Framework Convention on Climate Change, https://unfccc.int/files/meetings/paris_nov_2015/application/pdf/paris_agreement_english_.pdf. [2]

Note

[1] The self-assessment tool is available on the OECD's Subnational Government Climate Finance Hub as a downloadable Excel file. The self-assessment tool was developed based on the findings of the stocktake and case studies, and is directly linked to the guidelines. An overview is provided in Annex A.

2 A primer on green budgeting: International, national and subnational perspectives

After a brief history of green budgeting, this chapter describes existing green budgeting frameworks and green budgeting tools that are commonly used at the subnational level. Such tools including green budgeting tagging, environmental tax reforms, climate and environmental impact assessments and green budget statements. A diversity of green budgeting practices has emerged in the past two decades at both national and subnational levels. Concurrently, international organisations working on the topic, including the OECD, have introduced frameworks to support governments in implementing green budgeting.

Green budgeting involves a systematic approach to assess the overall coherence of the budget relative to a country, region, or municipality's climate and environmental agenda and to mainstream environmental and climate action across all policy areas and within the budget process (EC/OECD/IMF, 2021[1]).

It is essential that a green budgeting practice is adapted to the competences of the level of government implementing it and to their green objectives. Given this need to adapt green budgeting to national and local contexts, a diversity of practices has emerged in the past two decades at both national and subnational levels. Concurrently, international organisations working on the topic have introduced frameworks to support governments in implementing green budgeting, and several fora have been established to allow for collaboration and sharing of knowledge and best practices. After a brief history of green budgeting, this chapter describes existing green budgeting frameworks and commonly used green budgeting tools, especially at the subnational level.

A brief history of green budgeting

The term "green budgeting" first emerged in 1987 from the Brundtland Commission's report, which recommended that "*the major central economic and sectoral agencies of governments should now be made directly responsible and fully accountable for ensuring that their policies, programmes, and budgets support development that is ecologically as well as economically sustainable*" (World Commission on Environment and Development, 1987[2]). This report was followed by the experimental integration of environmental considerations into public financial management in the late 1980s in countries such as Norway, which introduced an Environmental Profile of the State Budget in 1989, and France, which around the same time introduced a compulsory report on environmental protection expenditure (*jaune budgétaire*) to be appended to the annual finance law (Gonguet et al., 2021[3]). Italy was also a frontrunner in this area; in 1999, the Parliament instructed the national government to highlight all environment-related resource allocations in the annual budget to produce an "environmental budget (ecoBilancio)" alongside the draft budget. The practice has continued ever since with the latest ecoBilancio released in 2022 (MEF, 2022[4]).

In parallel, in the late 1990s and early 2000s, a handful of subnational governments in Europe began experimenting with linking environmental considerations to their budgetary processes using methodologies such as the ecoBudget (Box 2.1) and the City and Local Environmental Accounting and Reporting (CLEAR) method (Chapter 3). These initiatives focused on developing local environmental targets and identifying indicators to track the progress towards meeting said targets, which is a pre-requisite step for undertaking a more comprehensive green budgeting approach.

Box 2.1. The ecoBudget methodology

An ecoBudget is an environmental management system for local natural resource management. It was developed by the International Council for Local Environmental Initiatives (ICLEI) for and with local authorities, in the context of the Aalborg Charter that pledged that signatories will "seek to establish new environmental budgeting systems which allow for the management of our natural resources as economically as our artificial resource, 'money'" (Aalborg Charter (ICLEI, 1994[5]), Part 1.14).

Through the use of physical, quantitative indicators to express the state of natural resources (air quality, water quality, etc), an ecoBudget can present local environmental targets and enable the monitoring of the state of the (local) environment in relation to these targets. In essence, it budgets natural resources in a very similar way to financial resources, following similar principles of efficiency, transparency, and monitoring and evaluation and following a similar cycle of development and reporting as would be used for a financial budget. Environmental resources are not monetised as part of an ecoBudget nor is it

directly linked to a local government's financial budget; however, it is possible to make this link by integrating the indicators and targets developed in the ecoBudget into the financial budget.

The ecoBudget methodology was developed in 1996 in Germany by four municipalities – Dresden, Nordhausen, Bielefeld, and Heidelberg – in co-operation with ICLEI-Local Governments for Sustainability. In 2003, ecoBudget was expanded across Europe as part of the European Union (EU)'s LIFE programme. Six cities took part in piloting the methodology outside of Germany: Växjö (Sweden), Amaroussion (Greece), Bologna (Italy), Ferrara (Italy), Kalithea (Greece) and Lewes (United Kingdom).

Växjö's ecoBudget

In recent decades, the municipality of Växjö has emerged as a climate leader, in part due to its pioneering implementation of the ecoBudget environmental management system beginning in 2003. In Växjö, the ecoBudget is used to track and measure progress towards the long-term targets of the municipality's Environmental Programme. To achieve this, environmental resource use objectives and a corresponding set of indicators are incorporated into draft budget programmes during the financial budget preparation phase and the entire budget is voted on by the city council. Each municipal department is then responsible for achieving the objectives relevant to them and for incorporating the budget indicators into their action plans. Symbols such as smileys and arrows were developed to monitor the progress of the ecoBudget; a practice that has since been used in measuring progress towards other municipal sustainability, democracy, equity and health targets. Every six months, progress reports based on the assessment of the indicators are presented to the city council, allowing for adjustments to be made in case certain objectives are not on track to being met.

Source: Energy Cities (2019[6]), *Climate-mainstreaming Municipal Budgets*, Energy Cities, https://energy-cities.eu/publication/climate-mainstreaming-municipal-budgets/ (accessed on 29 January 2021); ICLEI-Europe (2004[7]), *The ecoBudget Guide*, https://webcentre.ecobudget.org/fileadmin/user_uploads/ecoBUDGET_Manual_EN.pdf (accessed on 30 March 2022); LIFE (2004[8]), *LIFE European ecoBudget Pilot Project for Local Authorities Steering to Local Sustainability*, https://webgate.ec.europa.eu/life/publicWebsite/index.cfm?fuseaction=search.dspPage&n_proj_id=1850; ICLEI (1994[5]), *Charter of European Cities & Towns Towards Sustainability*, https://sustainablecities.eu/fileadmin/repository/Aalborg_Charter/Aalborg_Charter_English.pdf.

Green budgeting remained relatively unexplored until the early 2010s, when several national and subnational practices emerged, primarily in developing countries in the Asia-Pacific region, funded by developing institutions. The United Nations Development Programme (UNDP) and the World Bank in particular, have played a key role in advancing this area of work through the funding and implementation of climate budget tagging exercises in countries such as Bangladesh and Nepal. Climate budgeting, a type of green budgeting focused on climate change adaptation and mitigation, continues to develop in the Asia-Pacific region with national and subnational exercises found in Cambodia, India, Indonesia, the Philippines, and Pakistan.

In 2017, the OECD launched the Paris Collaborative on Green Budgeting (PCGB) at the One Planet Summit in collaboration with the governments of France and Mexico. The PCGB develops concrete and practical guidance to help governments at all levels embed their climate and environmental goals within their budget frameworks. It also identifies research priorities and gaps to advance the analytical and methodological groundwork for green budgeting, in addition to supporting peer-learning and the exchange of data and best practices. The work of the PCGB serves as a crucial step in achieving a central objective of the Paris Agreement on climate change as well as of the Aichi Biodiversity Targets and the United Nations' Sustainable Development Goals – aligning national policy frameworks and financial flows on a pathway towards low greenhouse gas emissions and environmentally sustainable development (OECD, 2020[9]).

In 2019, the Coalition of Finance Ministers for Climate Action was launched to foster collective engagement for a transition toward low-carbon and resilient development. Since its founding, finance ministers from over 60 countries have endorsed a set of six non-binding principles, the Helsinki Principles, which "promote national climate action, especially through fiscal policy and the use of public finance." Among these, Principle 4 focuses on "taking climate change into account in macroeconomic policy, fiscal planning, budgeting, public investment management, and procurement practices" (Coalition of Finance Ministers for Climate Action, 2019[10]). Green budgeting is thus an important area of work for the Coalition as it directly relates to Principle 4.

More recently, the post-COVID recovery has generated considerable additional interest in green budgeting as a tool to mainstream environment and climate action into recovery and stimulus packages (OECD, 2020[11]). An OECD survey from mid-2020 showed that 20 OECD countries had actively integrated green perspectives into their stimulus measures at that point in time (OECD, 2021[12]). In the EU, member states were encouraged to make use of green budgeting tools in developing their Recovery and Resilience Plans in order to meet the EU requirement that a minimum of 37% of funds for each plan be dedicated to climate action (Box 2.2). Moreover, the European Commission is actively promoting capacity building among member states to implement green budgeting through a technical training programme offered through its Technical Support Instrument. This programme is helping the EU to deliver on its Green Deal, which includes an explicit mention of fostering green budgeting practices within the EU (EC/OECD/IMF, 2021[1]).

Box 2.2. Green budgeting and the EU's Recovery and Resilience Plans

In December 2020, the European Council and the Parliament reached a provisional agreement on a EUR 672.5 billion Recovery and Resilience Facility (RRF). The aim of the RRF is to help member states to address the economic and social impacts of the COVID-19 pandemic while also ensuring that their economies undertake the green and digital transitions to become more sustainable and resilient. To receive support from the RRF, member states must prepare national Recovery and Resilience Plans (RRPs) detailing their reform and investment agendas until 2026. A minimum of 37% of each RRP's envelope must support the transition to a carbon-neutral economy and member states must prove that the reforms and investments do no significant harm to other environmental goals. In order to determine that this conditionality is met, member states are invited to use green budgeting tagging to tag the green content of the proposed reforms or investments following the existing climate tracking methodology already applied to cohesion policy funds. Member states will have to apply a weight to each measure to determine whether it fully contributes (100%), partially contributes (40%) or has no impact (0%) to green objectives.

Source: EC/OECD/IMF (2021[1]), *Green Budgeting: Towards Common Principles*, European Commission/OECD/International Monetary Fund.

Existing green budgeting frameworks

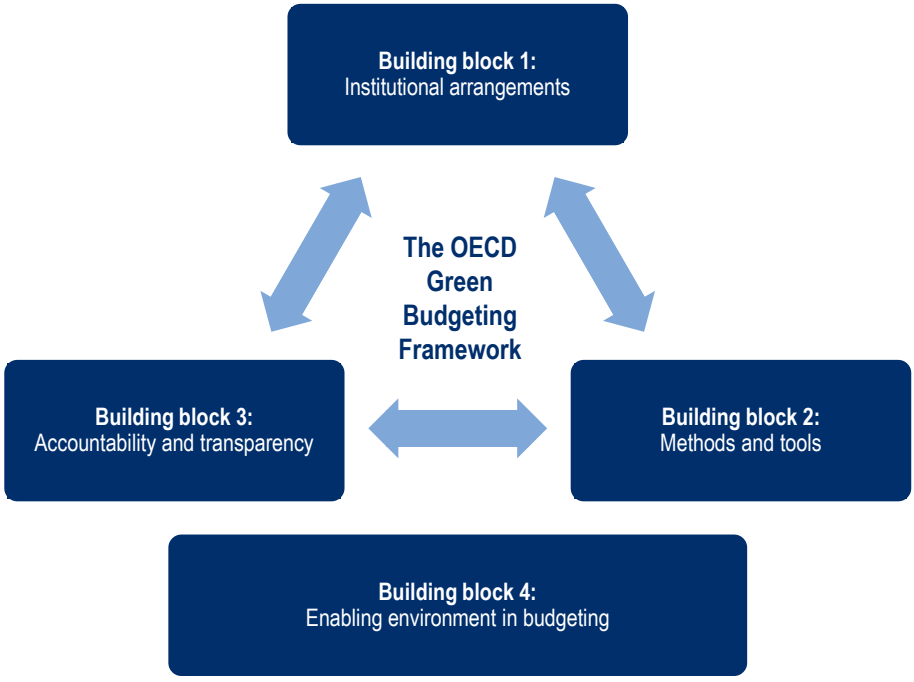
With the interest in green budgeting continuing to grow globally, international institutions including the European Commission, the International Monetary Fund (IMF) and the OECD have developed green budgeting frameworks to support all levels of government in developing and implementing their own practices. The OECD started to develop a green budgeting framework in 2020, which has served as inspiration for other complementary frameworks such as the European Commission's and the IMF's (Box 2.3).

The OECD's Framework for Green Budgeting

The OECD's Framework for Green Budgeting was developed based on existing national practices and consultation with PCGB members (OECD, 2020[13]). The framework identifies four building blocks to help ensure green budgeting approaches are linked to the broader pubic financial management process and so that efforts are sustained and remain effective over time (Figure 2.1). The four building blocks are:

1. **Institutional arrangements**: As the first step in green budgeting, governments could set out their national plans and strategies on climate change (both for mitigation and adaptation) and the environment. Such plans and strategies help orient fiscal planning, guide public policy, investment and other decisions on revenue and expenditure to support green priorities. The strategic framework can include the scope of general government activity and budgetary items.
2. **Methods and tools**: Green budgeting tools can contribute to informed and evidence-based decision-making and budget preparation, and strengthen monitoring, reporting and accountability. Such tools sit within a country's existing annual and multiannual budgetary processes.
3. **Accountability and transparency**: to help to embed green budgeting and assure its credibility. This can be achieved through reporting information to facilitate impartial scrutiny of the information by parliament and other oversight bodies such as independent fiscal institutions.
4. **Enabling environment in budgeting**: An enabling environment for green budgeting requires a strong institutional design where roles and responsibilities are clearly defined along with the timeline for actions and required deliverables and a well-designed legislative framework.

Figure 2.1. The OECD Green Budgeting Framework



Source: OECD (2020[13]), *Paris Collaborative on Green Budgeting: OECD Green Budgeting Framework*, http://www.oecd.org/environment/green-budgeting/.

The European Commission's Green Budgeting Reference Framework

In January 2022, the European Commission (EC) released its Green Budgeting Reference Framework which has a two-fold purpose: to provide a toolkit for member states looking to start green budgeting or

upgrade their existing practices and to serve as a reference for the EC to monitor member states' green budgeting practices (EC, 2022[14]). The latter fulfils a commitment outlined in the Green Deal communication that the EC *"will work with Member States to screen and benchmark green budgeting practices"* (EC, 2019[15]). The EU framework and the OECD Green Budgeting Framework are complementary, with the latter providing the overarching structure for green budgeting and budgetary policy making within which the former, more operational framework can be applied.

The Green Budgeting Reference Framework encompasses five elements considered key for implementing green budgeting at a national level (EC, 2022[14]). The five elements are:

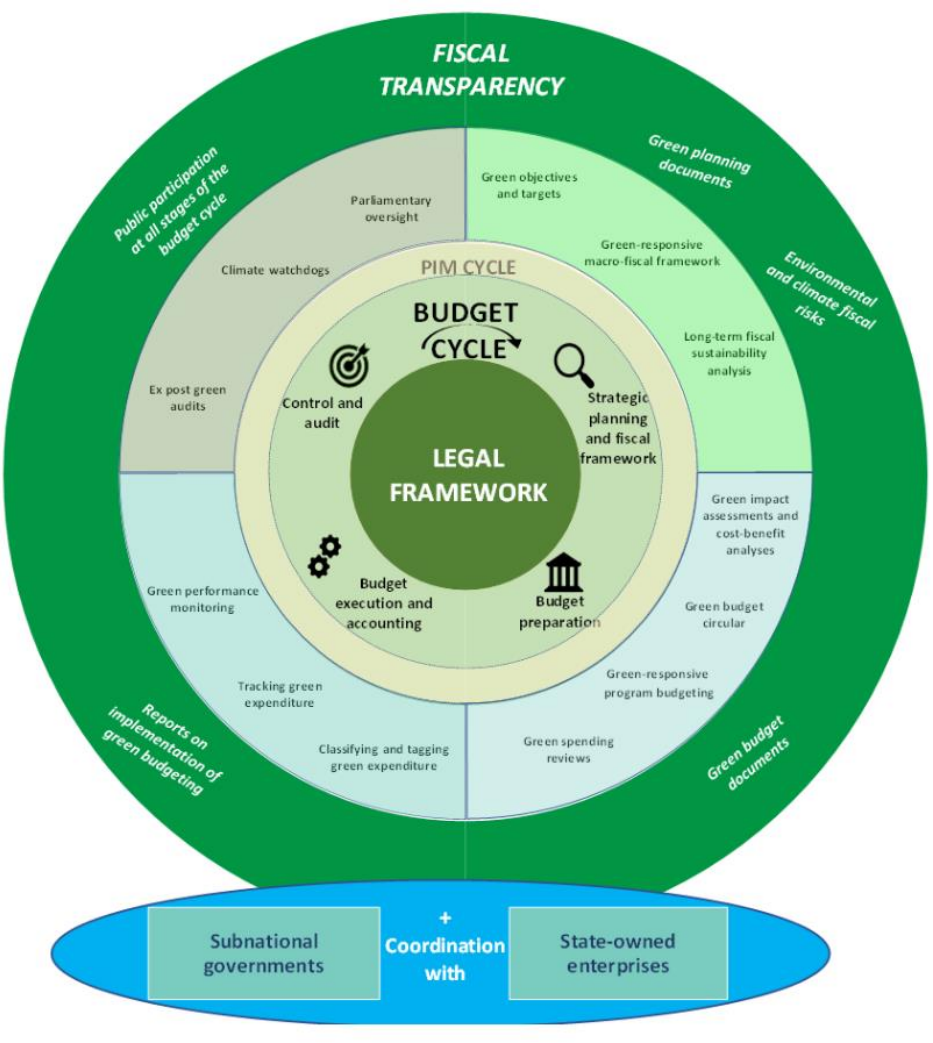
1. The coverage of environmental and climate objectives, of budgetary items and of public sector entities.
2. The methodology used to assess consistency of budgetary policies with green goals.
3. The deliverables, set out in a national legal provision or administrative document on green budgeting.
4. The governance structure, clearing setting out the role and responsibilities for each stakeholder.
5. And the transparency and accountability of the process and methodology.

Furthermore, depending on the ambition and comprehensiveness of a member state's green budgeting practice with regard to these five elements, the framework classifies the practice into one of three levels: essential, developed, and advanced. Although the framework was developed at the country level, subnational governments can also use it to develop and align their own green budgeting practices, taking into account their individual budgetary contexts and capacity constraints.

Box 2.3. The IMF's Green Public Financial Management Framework

In addition to the OECD and EC's green budgeting frameworks, the IMF has integrated green budgeting into its broader framework on green public financial management. The framework combines green budgeting with fiscal transparency, external oversight, and co-ordination with state-owned enterprises and subnational governments in order to provide a comprehensive picture of the various points of entry for integrating climate and environmental considerations within the budget cycle and broader fiscal policy-making (Figure 2.2). The framework explicitly acknowledges that national governments should co-ordinate with subnational governments in developing and adopting green PFM practices and that central governments have a responsibility in enabling green PFM reforms to trickle down to subnational levels.

Figure 2.2. A visual representation of the IMF's Green PFM Framework

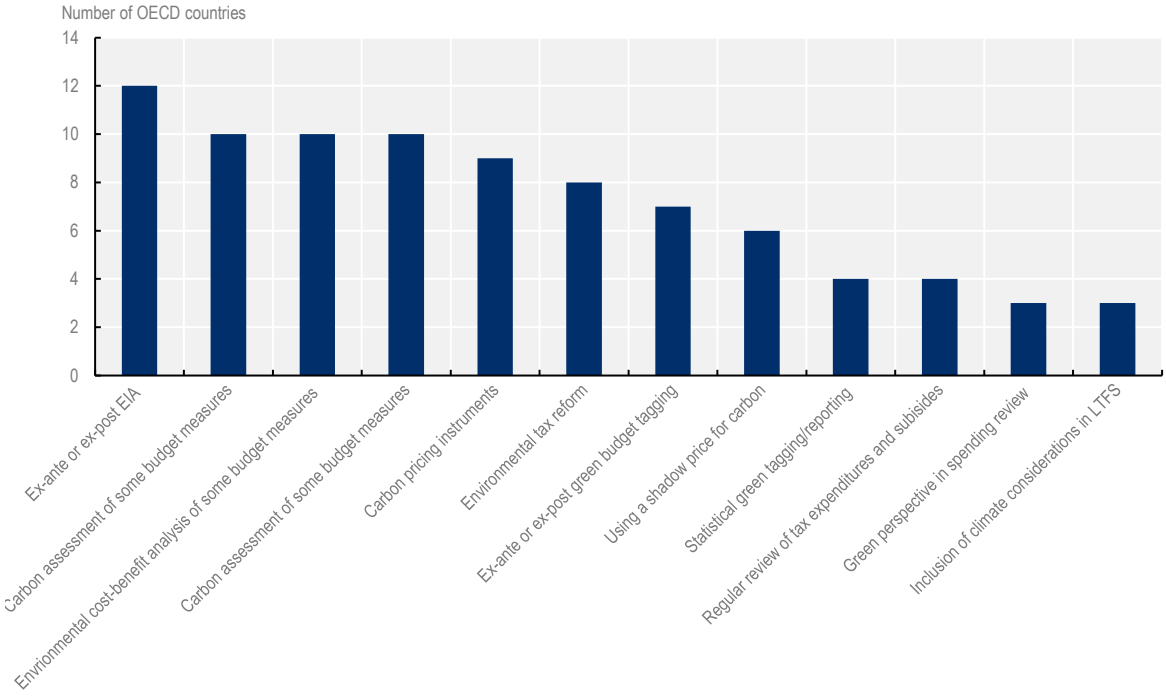


Source: Gonguet, F. et al. (2021[3]), *Climate-Sensitive Management of Public Finances - "Green PFM"*, International Monetary Fund.

Green budgeting tools commonly used by national and subnational governments

Policymakers have a variety of green budgeting tools at their disposal to be used throughout the budget process. Examples of green budgeting tools include green budget tagging, environmental impact assessments, green budget statements, ecosystem services pricing (including carbon pricing), incorporating a green perspective into spending reviews, and adding a green perspective to performance setting (OECD, 2020[9]; forthcoming[16]). Figure 2.3 provides information on the relative usage of some green budgeting tools among OECD countries, based on a survey carried out at the central government level in 2020. The list of tools included in the graph is not exhaustive but showcases the wide variety of green budgeting tools that exist.

Figure 2.3. A non-exhaustive inventory of green budgeting tools



Note: The data represents usage of tools in relation to the budget process. EIA=Environmental Impact Assessment; LTFS=Long-term Fiscal Strategy.
Source: OECD (2021[12]), *Green Budgeting in OECD Countries*, https://doi.org/10.1787/acf5d047-en; OECD/EC (2020[17]), *Joint Survey on Emerging Green Budgeting Practices*.

The review of existing practices outlined in Chapter 3 of this report, found that subnational governments in the OECD and EU use many of the same green budgeting tools as national governments. In particular, the review identified that the main green budgeting tools used by subnational governments are green budget tagging, environmental tax reform, environmental and climate impact assessments, and green budget statements. Each of these tools is explored in more detail below. Additional tools are described in Box 2.6.

Green Budget Tagging

Green budget tagging is the act of classifying budget expenditures according to their impact (be it positive or negative) on the environment and climate (OECD, 2021[18]). Within the OECD Green Budgeting Framework, green budget tagging falls under Building Block 2: Budgeting tools for evidence generation and policy coherence.

Green budget tagging can be carried out *ex-ante* (during the budget formation stage) and *ex-post* (during the budget execution phase or on closed accounts), with the tool reaching its full potential to generate evidence and facilitate policy coherence when it is done both *ex ante* and *ex post* (OECD, 2021[19]; Gonguet et al., 2021[3]). Some green budgeting exercises tag positive expenditures only; such is the case in Ireland at the national level. Tags are applied to climate positive expenditure at the budget programme level and no distinction is made between climate mitigation and climate adaptation expenditure. The Irish Government plans to expand the exercise to tag climate harmful expenditure as well (Cremins and Kevany, 2018[20]). Tagging both positive and harmful expenditures provides the most comprehensive understanding of the budget's climate and environmental impact and allows for tracking changes in harmful expenditures

relative to positive ones over time. France began green budget tagging in 2019 to enhance transparency and improve evidence-based decision-making. The Ministry of Finance and the Ministry of Ecological and Inclusive Transition work jointly to tag positive and negative expenditures across the entire central government budget on a graded scale (ranging from very favourable to unfavourable) for six environmental and climate axes, including climate mitigation, climate adaptation, and biodiversity (Ministère des finances, 2021[21]). France applied this same methodology to its economic recovery package, "Plan de Relance" (see Box 2.2 for more details). Recently, the EC drafted their own list of green and brown budgetary items to provide guidance to member states in developing their own green budget tagging methodologies (Box 2.4).

Box 2.4. EU List of green and brown budgetary items

To support member states in developing their own green budgeting practices, the EC drafted two lists of budgetary items whose net environmental impact could be considered broadly as 'green' or 'brown' as part of a green budget tagging exercise. These lists are not meant to be comprehensive but rather to provide some key examples of such measures to guide practitioners.

The structure of the lists loosely aligns with the Classification of the Functions of Government (COFOG) system. This ensures a large coverage of government functions and provides adaptability to the member states' different budgetary structures. The lists report selected budgetary measures including expenditure, tax expenditure, and revenues. Measures are grouped within 'sectors' (i.e. broad functions of the government), 'categories', and then 'subcategories.' For example, the sector 'transport' contains the category 'transport infrastructure', with one subcategory being 'sustainable and low carbon railways'. As an example of brown expenditure, the list includes the sector 'mining, manufacturing, and construction" within which the category 'mining' contains a sub-category 'unsustainable mining' which includes measures such as a subsidy for mineral oil in the offshore petroleum sector.

The lists have been compiled drawing on information from specific member states' budgets and environmental subsidies reports, the EU budget and various OECD and EU datasets. They have been discussed with experts and statistical representatives from member states. These lists will be uploaded on the green budgeting platform of the EC and will be updated on a yearly basis taking into account further developments, including in the environmental accounts and statistics.

Source: Gonguet, F. et al. (2021[3]), *Climate-Sensitive Management of Public Finances - "Green PFM"*, International Monetary Fund.

Several Asia-Pacific countries, namely Cambodia, Indonesia, Nepal and the Philippines, were early adopters of budget tagging focusing on climate change adaptation and mitigation objectives (OECD, 2021[18]). In India and the Philippines climate budget tagging has also developed at the subnational level (Box 2.5). In the case of Indonesia and the Philippines, these subnational practices following the implementation of a green budgeting practice at the national level; however, in India, subnational green budgeting as emerged on its own with a national green budgeting practice in place. South Africa has also recently carried out 11 pilot climate budget tagging practice at the national, provincial and municipal levels in order to develop an operational methodology adapted to the country's context (National Treasury, 2021[22]). The project is led by the National Treasury and has been supported by the World Bank.

Box 2.5. Subnational green budgeting practices in India, Indonesia, and the Philippines

Odisha, India

The state of Odisha, on the east coast of India, developed its own climate budget tagging methodology in 2020 and recently applied it *ex-ante* to the 2021-22 state budget. The investment budget of 11 departments deemed to be climate-related (agriculture, energy, forestry and environment, rural development, etc.) are tagged manually during the budget preparation phase. Tagging is centralised in the Finance Department rather than in the respective line ministries.

The methodology is unique in that it calculates both the climate change relevancy and the climate change sensitivity of expenditures using a benefits-based approach. The Climate Change Relevancy Share helps departments to identify priority expenditure programs to be considered during climate-related planning. The Climate Change Sensitivity Share is calculated to help departments identify components within expenditure programs that need to be climate-proofed via technical or financial intervention. The results of these calculations form a matrix that provide decision makers with valuable information on key follow-up areas and actions.

Indonesia

In Indonesia, the Ministry of Finance, with support from UNDP, conducted a pilot project in 2020 to implement climate budget tagging in three Indonesian provinces: Gorontalo, Riau, and West Java. The project used the same climate budget tagging methodology that has been used at the national government level since 2014. There are two steps to the subnational tagging methodology. The first step identifies expenditure items, at the output level, that have a climate adaptation or mitigation impact. The output level was chosen as it has the appropriate amount of information on the expenditure item to identify performance indicators and the amount of funds allocated. This step is done in collaboration between the Ministry of Finance and line ministries, with the line ministries providing technical input on the mitigation or adaptation impact of an output. The second step involves identifying the amount of funds allocated to each output. The entire process takes place during the budget preparation phase

Philippines

In the Philippines, the Climate Change Act of 2009 and the National Climate Change Action Plan both stipulated the need for the central government to develop a climate-responsive budget. To do so, the central government adopted climate budget tagging to prioritize and assign codes to climate change programs, activities, and projects in the annual budgets of national government agencies.

As of 2015, subnational governments are also required to tag climate programs, activities, and projects during the preparation of their annual investment programmes. The central government, through the Department of Budget Management, the Climate Change Commission, and the Department of Interior and Local Government, developed a Climate Change Typology for Local Government. This typology is a list of climate change adaptation and mitigation activities derived from the National Climate Change Action Plan, and grouped according to the strategic priorities of the plan. When preparing their annual investment programmes, subnational governments use the typology to determine whether the objectives and outcomes of their planned programs or projects are climate change adaptation or mitigation related. If at least one objective is an adaptation or mitigation measure, the subnational government considers the entire program or project budget as a climate change expenditure. If only specific components are adaptation or mitigation measures, then only the budgets for those specific components are considered as climate change expenditures.

Source: Government of Odisha (2021[23]), *Climate Budget 2021-22*, Government of Odisha; (Ministry of Finance of the Republic of Indonesia, 2020[24]), *The Contribution of Subnational Governments in the Implementation of NDC in Indonesia*, http://www.id.undp.org. Government of the Philippines (2021[25]), *Climate Change Expenditure Tagging for Local Government*, https://climate.gov.ph/files/CCET%20LGU%20Final.pdf (accessed on 3 May 2022).

Environmental tax reform

Environmental tax reform (ETR) refers to "bringing about a 'tax shift' in which a progressive increase in the revenues generated through environmentally related taxes provides a rationale for reducing taxes derived from other sources, such as income, profits and employment, the taxation of which is less desirable" (OECD, 2017[26]). Among OECD and EU countries, ETR is the main revenue related green budgeting tool used and can complement the use of green budget tagging when a tagging practice also assesses the green impacts of budgetary revenue sources.

Environmental taxation has emerged in recent decades as an important tool that national and subnational governments alike can use to combat climate change. Environmentally related taxes refer to any "compulsory, unrequited payments to general government levied on tax-bases deemed to be of particular environmental relevance" (OECD, 2004[27]). Environmental taxation has emerged in recent decades as an important tool that national and subnational governments alike can use to combat climate change. Carbon taxes, perhaps the most well-known of environmental taxes, are just one of a variety of existing environmentally related taxes which also include energy taxes, transport taxes, and pollution taxes, among others.

Tracking and comparing subnational green revenues, however, requires accounting for varying degrees of subnational revenue autonomy between countries. The ultimate goal of green budgeting exercises is to incorporate the evidence gathered into budgetary decision-making processes; however, subnational governments with limited revenue autonomy may be constrained in their ability to act on the results of a revenue analysis.

Climate and environmental impact assessments

Impact assessments are a key component of Building Block 2 of the OECD Framework for Green Budgeting, directly contributing to evidence gathering about the environmental and climate impact of budgetary policies (OECD, 2021[12]). Impact assessments are most commonly carried out ex-ante on proposed budget items to allow for comparison with alternative programmes or policies and to improve alignment with existing policy goals. It is also possible to conduct them ex-post. Impact assessments can be applied to individual budget programmes, measures, or even to the entire budget itself, and can vary with regards to the scope from purely carbon dioxide emissions to biodiversity impacts as well. Carbon impact assessments of individual policies or of the budget as a whole are rare among OECD members but the few existing cases in Scotland and Norway provide a starting point for future endeavours in this area.

Green Budget Statements

A green budget statement is a comprehensive report on the ex-ante environmental or climate impact of a draft budget (OECD, 2021[12]). Published alongside, or contained within, the draft budget, a green budget statement consolidates the information collected from other green budget tools such as environmental impact assessments, green budget tagging, and environmental fiscal reform. This tool falls under Building Block 3: Accountability and Transparency of the OECD Green Budgeting Framework.

Box 2.6. Examples of additional green budgeting tools

- **Performance frameworks:** Performance frameworks enhance the effectiveness of public policy by linking inputs to results. Performance budgeting supports green budgeting through the inclusion of performance measures that refer to relevant climate and environmental considerations.
- **Carbon costing and measurement tools:** Carbon tools include carbon assessment of budget measures, carbon-pricing instruments including fuel and carbon taxation, emissions trading systems and the use of a shadow price of carbon to evaluate public policies and investment.
- **Environmental cost-benefit analysis:** An analysis of the cost and benefits of a budget proposal that takes into account the environmental consequences that affect the natural environment.
- **Green spending reviews:** Green spending reviews consider the extent to which ministries and governmental agencies can transition to net-zero emissions and environmentally sustainable operations.

Source: EC/OECD/IMF (2021[1]), *Green Budgeting: Towards Common Principles*, European Commission/OECD/International Monetary Fund.

References

Coalition of Finance Ministers for Climate Action (2019), *Helsinki Principles*, https://www.financeministersforclimate.org/sites/cape/files/inline-files/FM%20Coalition%20-%20Principles%20final.pdf (accessed on 18 April 2022). [10]

Cremins, A. and L. Kevany (2018), *An Introduction to the Implementation of Green Budgeting in Ireland*, Department of Public Expenditure and Reform. [20]

EC (2022), *European Commission Green Budgeting Reference Framework*, European Commission, https://ec.europa.eu/info/sites/default/files/economy-finance/european_commission_green_budgeting_reference_framework.pdf (accessed on 5 April 2022). [14]

EC (2019), *The European Green Deal COM(2019)640*, European Commission, https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:52019DC0640 (accessed on 8 April 2022). [15]

EC/OECD/IMF (2021), *Green Budgeting: Towards Common Principles*, European Commission/OECD/International Monetary Fund. [1]

Energy Cities (2019), *Climate-mainstreaming Municipal Budgets*, Energy Cities, https://energy-cities.eu/publication/climate-mainstreaming-municipal-budgets/ (accessed on 29 January 2021). [6]

Gonguet, F. et al. (2021), *Climate-Sensitive Management of Public Finances - "Green PFM"*, International Monetary Fund. [3]

Government of Odisha (2021), *Climate Budget 2021-22*, Government of Odisha. [23]

Government of the Philippines (2021), *Climate Change Expenditure Tagging for Local Government*, https://climate.gov.ph/files/CCET%20LGU%20Final.pdf (accessed on 3 May 2022). [25]

ICLEI (1994), *Charter of European Cities & Towns Towards Sustainability*, Local Governments for Sustainability, https://sustainablecities.eu/fileadmin/repository/Aalborg_Charter/Aalborg_Charter_English.pdf . [5]

ICLEI-Europe (2004), *The ecoBudget Guide*, https://webcentre.ecobudget.org/fileadmin/user_uploads/ecoBUDGET_Manual_EN.pdf (accessed on 30 March 2022). [7]

LIFE (2004), *LIFE European ecoBudget Pilot Project for Local Authorities Steering to Local Sustainability*, https://webgate.ec.europa.eu/life/publicWebsite/index.cfm?fuseaction=search.dspPage&n_proj_id=1850. [8]

MEF (2022), *Ecobilancio 2022*, Ministero dell'Economia e delle Finanze, https://www.rgs.mef.gov.it/VERSIONE-I/attivita_istituzionali/formazione_e_gestione_del_bilancio/bilancio_di_previsione/ecobilancio/. [4]

Ministère des finances (2021), *Rapport sur l'impact environnmental du budget de l'État*, https://www.economie.gouv.fr/files/files/2021/Rapport_impact_environnemental_budget_Etat_2022.pdf?v=1633948985 (accessed on 7 June 2022). [21]

Ministry of Finance of the Republic of Indonesia (2020), *The Contribution of Subnational Governments in the Implementation of NDC in Indonesia*, http://www.id.undp.org. [24]

National Treasury (2021), *Climate Budget Tagging in South Africa*, https://www.cabri-sbo.org/uploads/files/Documents/Session-4-South-Africa.pptx (accessed on 7 June 2022). [22]

OECD (2021), *Green Budget Tagging: Introductory Guidance & Principles*, OECD Publishing, Paris, https://doi.org/10.1787/fe7bfcc4-en. [19]

OECD (2021), *Green Budget Tagging: Introductory Guidance & Principles*, OECD Publishing, Paris, https://doi.org/10.1787/fe7bfcc4-en. [18]

OECD (2021), *Green Budgeting in OECD Countries*, OECD Publishing, Paris, https://doi.org/10.1787/acf5d047-en. [12]

OECD (2020), "Green budgeting and tax policy tools to support a green recovery", *OECD Policy Responses to Coronavirus (COVID-19)*, OECD Publishing, Paris, https://doi.org/10.1787/bd02ea23-en. [11]

OECD (2020), *Inventory of Building Blocks and Country Practices for Green Budgeting: The OECD Framework for Green Budgeting*, OECD, Paris. [9]

OECD (2020), *Paris Collaborative on Green Budgeting: OECD Green Budgeting Framework*, OECD, Paris, http://www.oecd.org/environment/green-budgeting/. [13]

OECD (2017), *Environmental Fiscal Reform: Progress, Prospects and Pitfalls*, OECD, Paris, http://www.oecd.org/tax/tax-policy/tax-and-environment.htm. [26]

OECD (2004), *Environmentally Related Taxes*, OECD Glossary of Statistical Terms, OECD, Paris, https://stats.oecd.org/glossary/detail.asp?ID=6270 (accessed on 3 February 2021). [27]

OECD (forthcoming), *Green Budgeting Composite Indicator*, OECD Publishing, Paris. [16]

OECD/EC (2020), *Joint Survey on Emerging Green Budgeting Practices*. [17]

World Commission on Environment and Development (1987), *Our Common Future Towards Sustainable Development*, https://sustainabledevelopment.un.org/content/documents/5987our-common-future.pdf (accessed on 1 April 2022). [2]

3 State of play: Subnational green budgeting practices in OECD and EU countries

In recent years, as an ever-growing number of regions and cities have set ambitious climate and environmental targets, the interest in subnational green budgeting has also grown steadily as has the number of subnational governments implementing green budgeting practices. A stocktake of existing subnational green budgeting practices in OECD and EU countries found that green budgeting encompasses a variety of practices including carbon budgets, ecoBudgets, climate budgets, environmental and climate impact analyses, and more. Among the countries identified in the stocktake as having subnational green budgeting exercises, France stands out for having a large number of green budgeting exercises at all three levels of subnational government. Other interesting exercises were identified in Austria, Italy, Norway, Spain and the United Kingdom.

This chapter presents the first ever stocktake of subnational green budgeting practices in OECD and European Union (EU) countries. It was conducted based on desk research and used the Paris Collaborative on Green Budgeting's definition of green budgeting.

Without being exhaustive, it shows that in recent years as an ever-growing number of regions and cities have set ambitious climate and environmental targets, the interest in subnational green budgeting has also grown steadily. Likewise, the number of subnational governments implementing green budgeting practices has also increased.

Post-COVID-19 recovery plans, strongly centred on environmental and climate issues, certainly contribute to this trend, especially in the European Union. For some countries, new green budgeting practices are also an extension of other priority budgeting methods such as gender budgeting or pro-poor budgeting that are completing traditional incremental budgeting practices.

The stocktake shows that there is no one-size-fits-all approach to green budgeting, particularly at the subnational level. There is a need for different approaches to reflect the differences in the scale and type of climate and environmental challenges faced by different subnational governments depending on their location (e.g. urban vs rural, coastal vs mountainous areas, etc.) and characteristics (e.g. demographic and geographic size). Subnational government responsibilities also vary across countries and across levels of government (e.g. regions vs municipalities). The socio-economic role of subnational governments, and therefore their impact on the environment and climate, differs considerably according to the level of decentralisation and the assignment of responsibilities and revenues. In federal and decentralised countries, spending and revenues decisions are likely to have a higher impact on the green transition than in more centralised countries, where local governments play a more minor financial role. However, green budgeting is not limited to the largest subnational governments, and there are some small municipalities that are experimenting green budgeting, for example in France. In fact, while environmental and climate issues may differ depending on the size of territories and the scope of responsibilities, the fact remains that implementing green budgeting in small subnational governments is equally of interest, and can in some cases be easier given the more modest size of their budgets.

Finally, this heterogeneity can also be attributed to the fact that subnational budgeting and accounting systems differ substantially from one country to another, and even within countries across levels of subnational government. This heterogeneity in terms of accounting and budgetary systems is quite normal given the extreme diversity of multi-level governance systems among OECD and EU countries, as described above.

The stocktake revealed that there is considerable diversity in terms of methodology, scope, and reporting among existing subnational green budgeting practices.

Subnational green budgeting encompasses a variety of practices including carbon budgets, ecoBudgets, climate budgets, environmental and climate impact analyses, and more. In some cases, these existing subnational practices were inspired by national green budgeting exercises and methodologies, and in other cases they are stand-alone. These practices also vary in terms of coverage, some only assess capital expenditures while others include current expenditures. In terms of green objectives, some practices focus only on climate change adaptation and mitigation while others include broader environmental objectives such as biodiversity or water and air pollution. Moreover, some practices combine green budgeting with other priority budgeting approaches such as United Nations Sustainable Development Goals (SDG) budgeting, social objectives and gender budgeting. The underlying objective for carrying out a green budgeting exercise also varies between practices. Some practices use green budgeting as a tool for issuing green bonds or accessing green loans, while others use it primarily as a transparency and accountability tool.

All of the subnational green budgeting exercises identified in the stocktake, which focused on the OECD and EU, are in European countries. France stands out for having green budgeting exercises at all three levels of subnational government: regional, departmental, and municipal. Other interesting exercises were identified in Italy, Norway, Spain and the United Kingdom. At the regional level, there are a variety of green budgeting methodologies being used. In contrast, at the municipal level, most municipalities, regardless of country, were found to have based their green budgeting practice on one of two methods – the Climate Budgetary Assessment or the Climate Budget Approach – that they then adapted to their specific context and policy aims. Although outside the scope of the stock-take, subnational green budgeting practices were also identified in non-OECD and EU countries, particularly in Asia.

Regional green budgeting practices in the OECD and EU

At the regional level, the stocktake identified green budgeting practices in France, Italy, Spain and the United Kingdom. France is a leader in terms of subnational green budgeting, with multiple regional green budgeting practices using a common methodology inspired by the green budgeting methodology used at the national level.

France: Regional green budget tagging

In France, green budgeting practices have emerged at all subnational levels: regional, departmental,[1] and municipal. At the regional level, the regions of Brittany, Grand-Est, and Occitanie have launched a green budgeting practice. The three regions use a common green budget tagging methodology to assess the climate adaptation and mitigation impact of their budgets. The methodology was developed by the Institute for Climate Economics (I4CE)[2] and was inspired by the green budget tagging methodology used at the national level in France (I4CE, 2020[1]).

I4CE's methodology was co-constructed with five French municipalities and metropolises and originally intended to be used by municipalities not regions. As a result, the regions have adapted the methodology according to their competences, their respective local climate and environmental contexts, and their green objectives. There are two specific limitations associated with applying the I4CE methodology to regional budgets. First, French regions and municipalities have different spending responsibilities and there are some regional spending areas, such as agriculture and professional training, which are climate-related but were not included in the original methodology as they are not municipal competences. To address this limitation, I4CE, the association of French regions (*Régions de France*), and the aforementioned three regions formed a working group in 2021 to jointly extend the methodology to cover these spending areas (Box 3.1). The second limitation of the methodology is that it is best suited for operational expenditures rather than subsidies, which make up a significant part of the regional budget. Analysing the climate impact of subsidies requires additional information about the objective and nature of the subsidy, which can increase the administrative burden of the exercise.

The purpose of the methodology is to assess the climate adaptation and mitigation impact of all regional expenditure and to incorporate this information into future budgetary decisions. Ideally, the methodology should be applied to the entire budget, however, when starting out it is suggested that as a minimum the analysis should assess current and capital expenditure in the main budget, special budgets, and any delegated public service provision contracts. Revenues are not currently covered by the methodology as subnational governments in France have limited revenue autonomy; however, I4CE notes that they could be incorporated in the future. The methodology can be applied to both draft budgets and closed administrative accounts, in other words it can be applied *ex ante* and *ex post*.

Box 3.1. Methodological differences between French regions

Brittany launched their green budgeting practice by assessing the climate adaptation and mitigation impact of expenditure in their closed 2020 administrative accounts in order to test out the I4CE methodology and adapt it to their local context. They subsequently applied the adapted methodology to the 2022 draft budget. Their green budget excluded EU funds and funds linked to the COVID-19 pandemic response.

Grand Est applied the methodology to their 2022 draft budget. This initial analysis only assessed the climate mitigation impact of the budget; however, they have indicated plans to expand the analysis to include social and biodiversity impacts in the future. Their green budget excluded EU funds and funds linked to the COVID-19 pandemic response.

Occitanie was the first French region to launch a green budgeting practice, initially applying the I4CE methodology to assess the climate mitigation impact of their 2021 draft budget. Their second green budget was voted on as part of the 2022 draft budget and they now intend to apply the analysis *ex post* to the 2021 closed accounts to follow-up on their initial analysis of the 2021 draft budget. Their 2022 green budget excluded EU funds, funds linked to the COVID-19 pandemic response, and debt repayment expenditure.

Notes: COVID-19 response funds were considered exceptional expenditure and excluded to allow for comparability with the results of future analyses. Information for Brittany comes from the regional case study presented in Chapter 5 of this report.
Source: Région Grand Est (2021[2]), *Grand Est Budget 2022*, https://www.grandest.fr/wp-content/uploads/2022/01/grand-est22-budget-2022-papok.pdf (accessed on 8 April 2022); La Région Occitanie (2021[3]), *Budget Primitif 2022*.

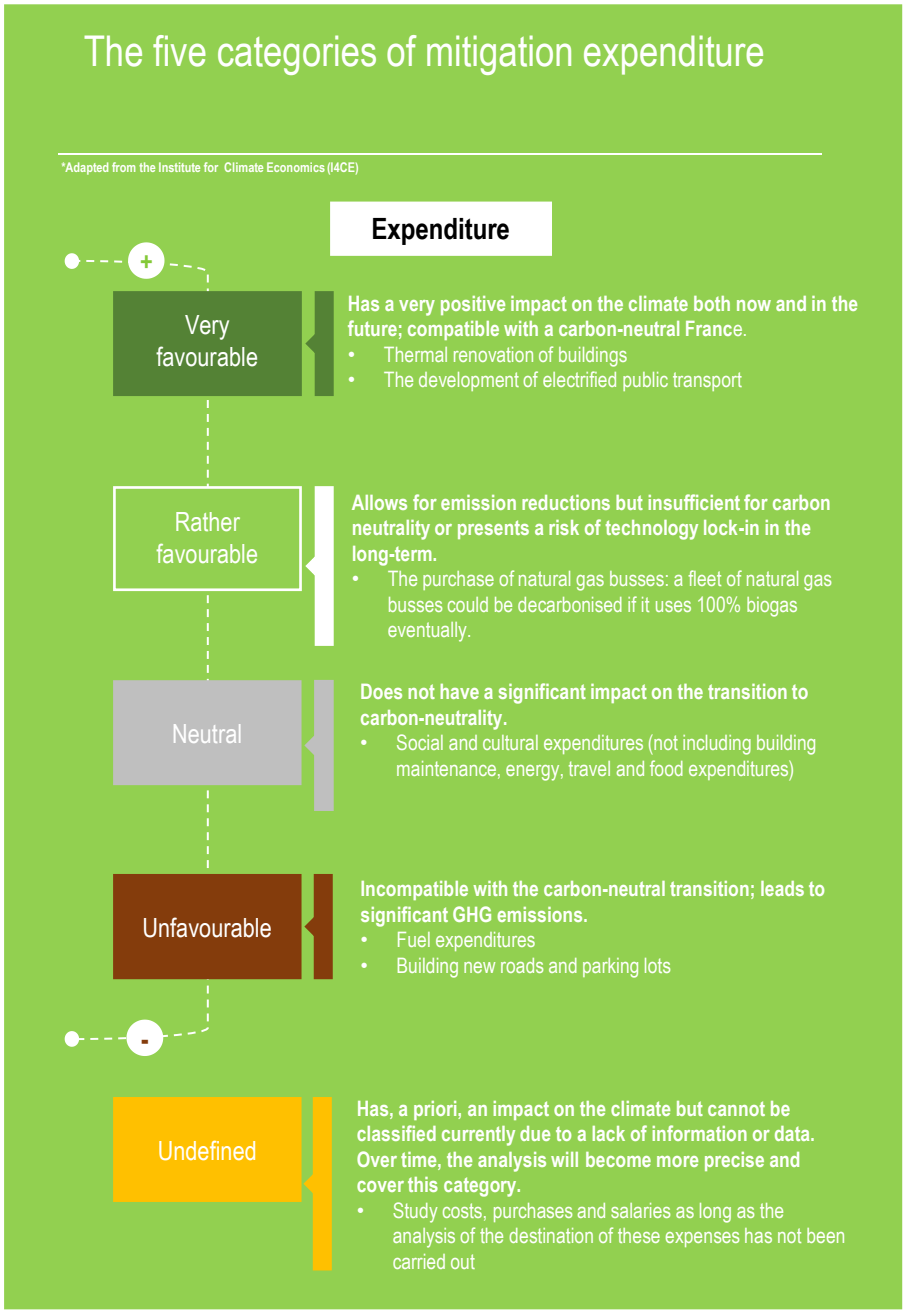
An analysis of the climate impact of expenditure using the I4CE methodology takes place in two steps:

- The first step is a high-level analysis of all the expenditure items to classify them into three categories: those with a neutral climate impact, those lacking sufficient information to be classified (labelled “undefined” in the I4CE methodology), and those to be further analysed for their climate impact (labelled “to analyse”).
- The second step is applied only to those expenditures classified as “to analyse” by the first step. This subset of expenditures is further analysed according to their climate impact using “structuring hypotheses” and a colour-coded grade scale ranging from favourable to unfavourable (Figure 3.1).

The structuring hypotheses for climate mitigation are based on France’s net-zero carbon emissions by 2050 objective corresponding to the French National Low-Carbon Strategy (SNBC). I4CE defined nine sectoral structuring hypotheses (for construction, transport infrastructure, vehicle purchase and maintenance, highways, food, waste, energy purchases, energy network and infrastructure, software and new technologies, and green spaces) and six transversal hypotheses (for personnel expenditure, business travel expenses, climate taxes, subsidies, public procurement and sustainable purchasing, carbon compensation). Regional expenditure is therefore analysed based on these sectoral or transversal hypotheses to determine whether an expense reduces emissions, increases emissions, or has no impact. To assess the impact of expenditure on climate adaptation, the I4CE methodology requires the region or municipality to link the structuring hypotheses to their local adaptation plans and objectives, given the highly localised nature of climate change adaptation actions and impacts. The adaptation expenditure tagging methodology, therefore, differs from the mitigation tagging methodology, most notably in the fact that it does not use the colour-coded grading system. Instead, expenditure items are first analysed to determine if they are neutral or “potentially structuring”, meaning if they have a climate adaptation “lever” and could contribute to local climate adaptation objectives. Next all potentially structuring expenditures are analysed to see if an adaptation policy for the policy area of the expenditure in question exists. If it does,

and the policy is being correctly implemented, then the expenditure is flagged as having a "suitable" climate adaptation impact. If not, it is considered to be "unsuitable". Thus far, Brittany is the only French region to have begun evaluating the climate adaptation impact of its budget; more information is available in Chapter 5 of this report.

Figure 3.1. I4CE's colour-coded expenditure categories



Note: This grading scale is used in both region and municipal level green budgeting exercises in France. This is a similar scale to what is used in France's national-level green budgeting exercise.

Source: Adapted and translated by the author from I4CE (2020[1]), *Évaluation climat des budgets des collectivités territoriales: guide méthodologique*, https://www.i4ce.org/download/evaluation-climat-des-budgets-des-collectivites-territoriales-guide-methodologique.

Sardinia, Italy: Regional green budget analysis

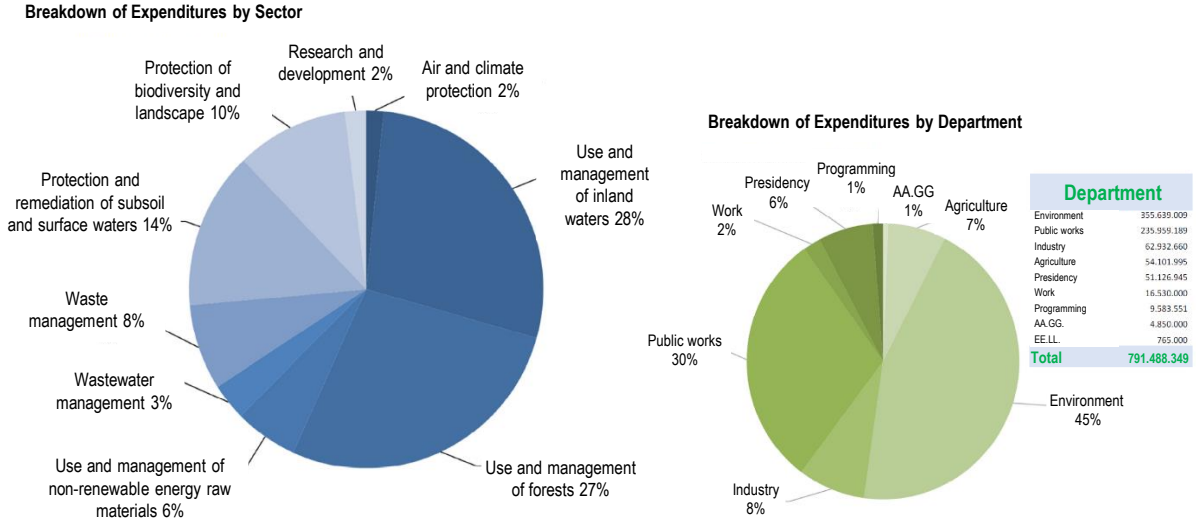
The region of Sardinia's (Italy) approach to green budgeting is centred on an annual analysis of its environmental protection and natural resource use and management expenditure (Direzione Generale dei Servizi Finanziari, 2021[4]). Sardinia was inspired by the national-level green budgeting practice conducted annually by the Italian government, which also tracks environmental protection and natural resource use expenditure.

Implemented for the first time in 2019, the exercise tracks both current and capital expenditures at the level of each individual budget chapter, reconciling the expenditure by missions, programmes, and COFOG codes with CEPA[3] and CRUMA[4] codes for environmental protection expenditure and natural resource use and management expenditure, respectively. Tracking is carried out on the draft budget and therefore the results show the forecasted expenditure in these two areas for a given year.

Climate-favourable expenditures are tagged for a list of 13 sectors that include forest management and use, inland water sources management and use, protection and rehabilitation of soil, subsoil and surface water; wastewater management, research and development, and waste management to name a few.[5]

The data collected from this exercise is used to produce a report with graphs showing the breakdown of forecasted expenditure by sector, by type of expenditure (capital or current), and by government department (Figure 3.2). In 2021, the region's environmental protection and natural resource use and management expenditure totalled nearly EUR 790 million across nine sectors (Direzione Generale dei Servizi Finanziari, 2021[4]).

Figure 3.2. Sardinia: Breakdown of expenses by sector and by department



Source: Direzione Generale dei Servizi Finanziari (2021[4]), *Ecobilancio 2021 della Regione Sardegna*, https://www.regione.sardegna.it/j/v/2592?&s=1&v=9&c=10803&n=10&nodesc=1 (accessed on 6 April 2022).

Andalusia, Spain: A multifaceted approach to green budgeting

The autonomous region of Andalusia, Spain was the first Spanish region to adopt green budgeting, in 2018, and the only subnational green budgeting practice identified in this stocktake to have made green budgeting mandatory by regional law.[6] Andalusia's green budgeting practice is predicated on a regional strategy to integrate a green perspective into all aspects of regional strategic planning, which itself serves as guidance for the region's budgetary decision-making (Autonomous Community of Andalusia, 2020[5]).

Moreover, in developing its green budgeting practice Andalusia is building on its well-established gender budgeting practice, dating back to 2004, and which the region intends to link with their green budgeting approach given that the impacts of climate change affect men and women differently and require public action that takes this into account in order to ensure a just transition (Autonomous Community of Andalusia, 2020[5]).

Andalusia's green budgeting practice is multifaceted and includes climate impact assessments, green budget tagging, and environmental tax reform, among other aspects. The 2018 Andalusian climate change law set outs two key aspects of the region's green budgeting approach: budgetary climate indicators and climate impact assessments for regional and local planning and strategy documents (Boletín Oficial del Estado, 2018[6]). The law stipulates that the region is to develop climate change budgetary indicators to measure and track the impact of budget programmes on climate change adaptation and mitigation, and that the Budget Department is to prepare an annual report tracking the evolution of these indicators. In the 2021 budget, more than 60 climate change indicators were presented to identify the climate impact of budget measures (Autonomous Community of Andalusia, 2021[7]). The second key aspect is a multi-step climate impact assessment for regional and local plans and programmes thought to have an impact on climate change and the clean energy transition. Plans and programmes identified as having a climate change impact must include five elements as part of their proposal:

- A climate change vulnerability analysis from an environmental, economic, and social perspective.
- Steps to promote medium- and long-term climate change mitigation.
- Justification of how the plan or programme aligns with the Andalusian Plan of Action for the Climate.
- Indicators to evaluate the climate impact of the plan or programme.
- An analysis of the potential direct and indirect impact of the plan or programme on energy consumption and greenhouse gas emissions.

An additional aspect of the region's green budgeting practice is the EUR 1 million Green Budget Fund set up to fund projects that integrate a green perspective into the region's budget (Junta de Andalucía, 2020[8]). Among all levels of government practising green budgeting in the OECD and EU, Andalusia is the only one to have established such a fund. Proposed projects must focus on at least one of several green objectives including environmental protection, the fight against climate change, environmental sustainability, and/or mitigating the socio-economic impacts associated with climate change mitigation and adaptation. Additionally, proposals are also required to address one of three budget-programming objectives which include promoting climate impact assessments; fostering the development and monitoring of budget objectives, actions, and indicators; and promoting capacity building and climate change awareness among public officials, particularly regarding the relationship between climate change and the budgetary process. Among the projects selected under the Fund's first call for proposals was a project entitled "Study of the theoretical foundations and main indicators, to integrate the gender approach in the Green Budget in the framework of the competences of the Andalusian Regional Government". This project carried out an initial analysis on how to consolidate the region's well-established gender budgeting approach with its newly-established green budgeting approach (Autonomous Community of Andalusia, 2020[9]). This work led to the development of a set of guidelines for regional officials to use to assess the gender and green impact of proposed budget measures and to assign relevant impact indicators.

Beyond these existing green budgeting tools, Andalusia is also currently collaborating with DG REFORM of the European Commission to develop two additional aspects of their green budgeting practice. Firstly, the Region has developed a Sustainable Finance Framework to serve as the basis for issuing sustainable bonds to fund green and social projects. Part of developing this framework included implementing green budget tagging within the regional budget in order to identify projects to be funded using the proceeds of sustainable (green and social) bond issuances.

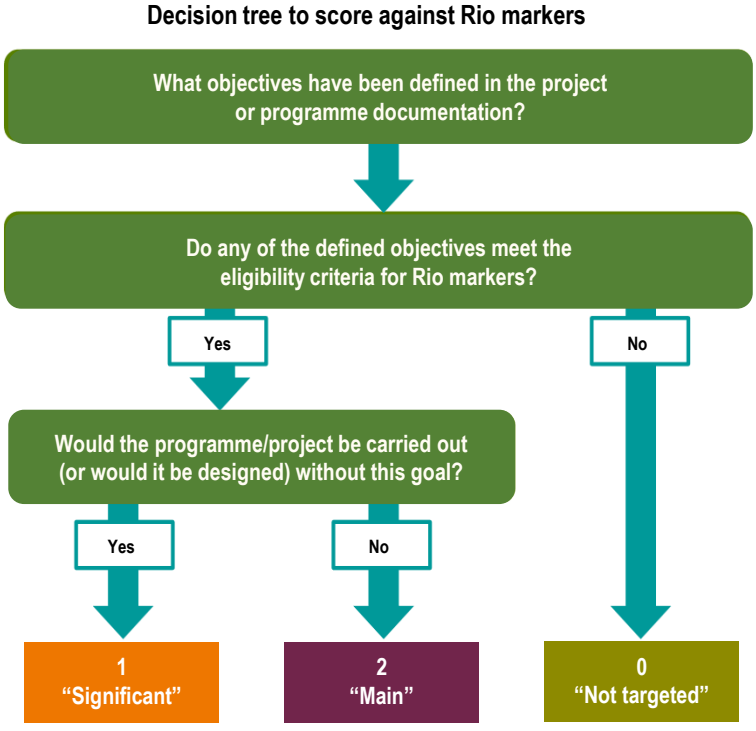
The final aspect of Andalusia's green budgeting practice is environmental tax reform. As part of a second ongoing DG REFORM project, the region is collaborating with the OECD to design, develop, and implement tax reforms in four green domains: climate change and air pollution; electricity usage; water pollution; and circular economy. The project aims to provide recommendations to Andalusia so that it can plan potential adjustments to its environmental and climate relevant tax legal framework, with a view to improving regional green outcomes and strengthening contributions to national and global performance.

Catalonia, Spain: Climate budget tagging using the OECD DAC Rio Markers for Climate

The Catalonian government recently released the results of its first climate budget tagging practice in March 2022 (Generalitat de Catalunya, 2022[10])The regional government chose to base their methodology on the European Commission's climate tagging methodology, which uses the OECD DAC Rio Markers and a set of climate coefficients (OECD, 1998[11])

Catalonia's methodology analyses the climate adaptation and mitigation impact of budget programmes, based on their stated objective. The methodology consists of three steps. The first step analyses whether each programme's strategy is in line with Rio Markers' eligibility criteria. Expenditures that do not meet these criteria are labelled as "not targeted", with a score of 0 points. Expenditures that meet Rio's eligibility criteria are further classified based on whether they contribute to mitigation or adaptation objectives. Then, the second step consists in determining the degree of contribution of the expenditure to the corresponding marker. Expenditure programmes that are essentially oriented towards the objective set by the Rio Marker are allocated 2 points ("Main"). Expenditure whose objectives are only partially aligned with Rio Markers are allocated 1 point ("Significant") (Figure 3.3).

Figure 3.3. Catalonia's climate budget tagging decision-tree



Source: Generalitat de Catalunya (2022[10]), *Green Budgets: Report on the Climate Perspective in the Budget of the Government of Catalonia*, https://aplicacions.economia.gencat.cat/wpres/AppPHP/2022/pdf/VOL_P_CLI.pdf (accessed on 3 May 2022).

Finally, the third step consists in translating the results into a percentage of analysed expenditure that can be considered significant in terms of fighting against climate change. While there is no detailed methodology to derive coefficients from the Rio Markers, Catalonia followed the convention set up by the European Commission, which stipulates that 100% of expenditure with a score of 2 should be counted, 40% for expenditure with a score of 1, and 0% for expenditure lines with a score of 0. Based on this methodology, it was estimated that 19.8% of Catalonia's 2022 Budget Programme contributes to the fight against climate change (corresponding to 21 budget programmes, 12 focused on mitigation and 9 focused on adaptation) (Generalitat de Catalunya, 2022[10]).

Scotland, United Kingdom: Carbon impact assessments

Scotland's green budgeting practice uses a form of environmental impact assessment to analyse the carbon footprint of all goods and services purchased by the Scottish government's annual budget. Based on Section 94 of the 2009 Climate Change (Scotland) Act, a "Carbon Assessment" is included alongside the draft budget, detailing the emissions impact of expenditure proposals within the budget (Scottish Government, 2020[12]). By including this statement within the draft budget, Scotland is also using the green budget statement tool (Box 3.2).

The Carbon Assessment covers direct emissions (e.g. emissions from the generation of electricity consumed by the government) and imported emissions that are generated outside of Scotland in producing the direct and indirect goods and services that the government purchases. The Assessment, however, does not account for "second-round" emissions. For example, the emissions generated from constructing a road paid for by the government would be assessed but the emissions generated from the cars using the road would not be accounted for. Within the annual report, the emissions estimates are broken down by spending portfolio (e.g. justice, health and sport, education and skills, etc.) and by industry (energy, water, and waste; manufacturing; agriculture, forestry, and finishing; etc.) to provide information on which area of spending generates the most emissions. Additionally, data is provided on the total emissions per type of expenditure (current versus capital).

Box 3.2. Findings from Scotland's 2021 Carbon Assessment

The 2021 Carbon Assessment estimated that the total emissions linked to GBP 5.8 billion in capital expenditure in the 2021-22 Budget amounted to 1.3 million tonnes of carbon dioxide equivalent (MtCO2e), while emissions associated with current expenditure amounted to 8.9 MtCO2e. The expenditure portfolio "Communities and Local Government" had the highest total amount of CO2 emissions, followed by the Health and Sport portfolio and the Transport, Infrastructure, and Connectivity portfolio.

Source: Scottish Government (2021[13]) (2021), *Carbon Assessment of the Scottish Budget 2021-22*, https://www.gov.scot/publications/carbon-assessment-scottish-budget-2021-22/documents/ (accessed on 8 April 2022).

Municipal green budgeting practices in the OECD and EU

This stocktake identified ongoing municipal green budgeting practices in Austria, France, and Norway. Interestingly, each of the municipal practices identified uses one of two methods: the "climate budget approach" developed by the city of Oslo or the "climate budgetary assessment" methodology developed by I4CE (Table 3.1). The climate budget approach is a climate governance system that directly links the municipality's annual carbon budget to its financial budget through the integration of ex-ante analysis of

the emissions reduction potential of proposed budget measures into budget and policy decision-making processes. In comparison, the climate assessment of budget is a technical methodology to tag budget expenditure according to its climate impact (favourable, neutral, or harmful) and to provide a snapshot of the climate impact of a region or municipality's budget, but not in terms of quantified emissions reductions

A third method, City and Local Environmental Accounting and Reporting (CLEAR), was also identified by the stocktake, however, very few of the 18 municipalities that participated in developing the methodology in the early 2000s continue to use it. As such, it is not included in Table 3.1 which only covers existing green budgeting practices. Also, a new approach to budgeting, "participatory budgeting" is excluded from this inventory as it cannot be considered as a green budgeting exercise per se, although many participatory budgeting exercises have increasingly begun to focus on funding green projects, with climate change adaptation or mitigation benefits (Box 3.3. Green Participatory Budgeting). Each of the methods is outlined in detail below with additional information on how municipalities have adapted them to their specific contexts.

Table 3.1. Existing municipal green budgeting practices in the OECD and EU, by method

Climate budget approach	Climate budgetary assessment methodology
Oslo (Norway)	City of Paris (France)
Hamar (Norway)	City of Lille (France)
Trondheim (Norway)	Métropole of Lille (France)
Bergen (Norway)	Métropole of Lyon (France)
Kristiansand (Norway)	Eurométropole of Strasbourg (France)
Issy-les-Moulineaux (France)	City of Rennes (France)
Vienna (Austria)	City of Betton (France)
	Grand Bassin de Bourg-en-Bresse (France)

Note: This is a non-exhaustive list of practices as it is possible that there are more municipalities currently developing their green budget practices but have not yet communicated to the public about it.

Box 3.3. Green Participatory Budgeting

Participatory Budgeting is a democratic process in which community members decide on how to spend part of a public budget. This approach builds upon two distinct needs: improving public performance and enhancing the quality of democracy. Participatory budgeting varies from city to city, however, at its core it consists of a city, region, or even country setting aside a portion of its public budget, citizens then submit project proposals, and finally citizens vote on which projects to fund using the allocated budget. The first participatory budget was in Porto Alegre, Brazil in 1989 and has since been adopted by 2 700 governments worldwide. The types of projects funded can be subject to conditionality including thematic restrictions (i.e. green or climate-related, health, education, basic services, etc.), placed-based restrictions (i.e. a specific neighbourhood, district, or city), and actor-based restrictions (i.e. focused on vulnerable communities, marginalised communities, youth, etc.). Participatory budgeting has been implemented across all levels of government, and can even be implemented at the school board or community housing board level.

With the increased urgency to transition to a carbon-neutral economy, many participatory budgeting exercises have increasingly begun to focus on funding green projects, with climate change adaptation or mitigation benefits. The city of Lisbon (Portugal) is a leader in participatory budgeting and green participatory budgeting. Beginning in 2019, the entirety of the allocated participatory budget funds has

been directed towards green projects, which for the 2021 cycle totals EUR 2.5 million. Examples of projects funded include the creation of greenspaces on unused wasteland, secure bicycle parking infrastructure, and urban gardens. Another example is the city of Vienna (Austria), which launched a participatory budget for climate action in early 2022. To reach its objectives, the municipality created four new staff positions dedicated to enabling citizens' participation and civil servant capacity building. In its pilot phase, in 2021, the participatory budget focused on three municipal districts and allocated EUR 6 million in expenditure. This initiative will unfold in parallel with several complementary green measures taken at the municipal level, including the introduction of a climate budget. Among OECD countries, other examples of green participatory budgeting initiatives include Grenoble (France), Brussels (Belgium), and San Pedro Garza Garcia (Mexico).

Source: Cabannes, Y. (2020[14]), *Contributions of Participatory Budgeting to Climate Change Adaptation and Mitigation*, https://issuu.com/uclgcglu/docs/2020_9_pb_contributions_to_climatechange_adaptatio (accessed on 7 May 2021); Lvovna Gelman, V. and D. Votto (2018[15]), "What if citizens set city budgets? An experiment that captivated the world - Participatory budgeting - Might be abandoned in its birthplace", https://www.wri.org/insights/what-if-citizens-set-city-budgets-experiment-captivated-world-participatory-budgeting (accessed on 7 May 2021); City of Lisbon (2021[16]), *Lisbon Participates (Lisboa participa)*, https://op.lisboaparticipa.pt/ (accessed on 7 May 2021); İpek, E. (2018[17]), "New approaches in public budgeting", https://doi.org/10.5772/intechopen.82371; City of Vienna (2022[18]), *The Vienna Climate Team (Ab jetzt Ideen beim Wiener Klimateam einreichen)*, https://www.wien.gv.at/umwelt-klimaschutz/klimateam.html.

Climate budgetary assessments: Examining the climate impact of municipal budgets

The climate budgetary assessment methodology was developed by I4CE in collaboration with five French cities and metropolises[7] as well as the national environmental agency (ADEME), the Association of French Mayors (AMF), EIT Climate KIC, and the French Association of Large Cities (France Urbaine) (I4CE, 2020[1]). The methodology was inspired by the green budget tagging methodology used by the French national government. Several regions and departments in France have also adopted the I4CE climate budgetary assessment methodology and adapted it to their respective budgetary contexts (Box 3.4).

Box 3.4. An overview of I4CE's climate budgetary assessment methodology for municipalities

The aim of I4CE's climate budgetary assessment is to examine the climate adaptation and mitigation of a municipality's budget. Carrying out such an assessment enables elected officials to:

- Identify and understand which expenditures have a positive impact on climate adaptation and mitigation and which ones have a negative impact.
- Assess the alignment of the budget with climate objectives.
- Analyse opportunities for redirecting expenditure to improve its alignment with climate objectives.
- Monitor developments in the climate impact of the budget year on year.

The methodology is designed to analyse all expenditure in a municipality's main budget, budget annexes, direct concession budgets, and the budgets from any inter-municipal co-operation bodies that the municipality participates in. Any direct concession or inter-municipal co-operation budgets included in the assessment are prorated based on the level of participation of the municipality. Revenues are not currently covered by the methodology as municipalities in France have limited revenue autonomy; however, I4CE notes that they could be incorporated in the future. The methodology can be applied to both draft budgets and closed administrative accounts, in other words it can be applied *ex ante* and *ex post*.

An analysis of the climate impact of expenditure using the I4CE methodology takes place in two steps:

- The first step is a high-level analysis of all the expenditure items to classify them into three categories: those with a neutral climate impact, those lacking sufficient information to be classified (labelled "undefined" in the I4CE methodology), and those to be further analysed for their climate impact (labelled "to analyse").
- The second step is applied only to those expenditures classified as "to analyse" by the first step. This subset of expenditures is further analysed according to their climate impact using "structuring hypotheses" and a colour-coded grade scale ranging from favourable to unfavourable.

The structuring hypotheses for climate mitigation are based on France's net-zero carbon emissions by 2050 objective corresponding to the French National Low-Carbon Strategy (SNBC). I4CE defined nine sectoral structuring hypotheses (for construction, transport infrastructure, vehicle purchase and maintenance, highways, food, waste, energy purchases, energy network and infrastructure, software and new technologies, and green spaces) and six transversal hypotheses (for personnel expenditure, business travel expenses, climate taxes, subsidies, public procurement and sustainable purchasing, carbon compensation). Municipal expenditure is therefore analysed based on these sectoral or transversal hypotheses to determine whether an expense reduces emissions, increases emissions, or has no impact. To assess the impact of expenditure on climate adaptation, the methodology requires a municipality to link the structuring hypotheses to their local adaptation plans and objectives, given the highly localised nature of climate change adaptation actions and impacts. In this way, mitigation expenditure is tagged according to its impact, not its objective.

Source: I4CE (2020[1]), *Évaluation climat des budgets des collectivités territoriales: guide méthodologique*, https://www.i4ce.org/download/evaluation-climat-des-budgets-des-collectivites-territoriales-guide-methodologique.

Municipalities across France have adapted the climate budgetary assessment methodology to their specific contexts:

- The **city of Lille** and the **metropolis of Lille** were both members of the I4CE working group that developed the climate budgetary assessment methodology and both chose to adapt the methodology in similar ways. This includes analysing the impact of their budgets on air quality in addition to climate change adaptation and mitigation, as these are the three pillars of the Lille Climate Plan and the Metropolitan Territorial Climate, Air and Energy Plan[8] (PCAET) (Métropole Européenne de Lille, 2021[19]). They both chose to pilot the methodology on their 2019 closed administrative accounts before subsequently expanding the exercise to their draft budgets in 2021, establishing both an ex-ante and ex-post assessment. The two local authorities also have the same internal organisation for conducting the climate budgetary assessment, with the Department of Ecological Transition leading the project in collaboration with the Finance Department and other related departments. For the metropolis of Lille, the climate budgetary assessment is part of a broader systematic approach to integrating climate considerations across all of the metropolis' actions, which also includes a green public procurement strategy and the development of carbon budgets for the metropolitan region (Lommere and Beretta-Delmarre, 2022[20]).
- The **city of Paris** assesses the climate mitigation impact of their budgets. They started in 2020 by applying the methodology to the 2019 closed administrative accounts before subsequently expanding the assessment to their multiannual investment plan (*Plan pluriannuel d'investissement* - PPI) in 2021 (City of Paris, 2021[21]). Similar to the city and metropolis of Lille, the city of Paris now carries out an ex-ante assessment of their draft budgets and an ex-post assessment of their closed administrative accounts to provide a holistic picture of the climate impact of their current and capital expenditures each year.

- The **Eurométropole of Strasbourg** analyses its draft budgets through three prisms: the Sustainable Development Goals, the climate budgetary assessment, and their PCAET. Their climate budgetary assessment examines the climate mitigation impact of current and capital expenditures in relation to the emissions reduction targets set out in the European metropole's climate plan adopted in December 2019.
- The municipality of **Clermont-Ferrand** constructed its 2021-2030 multiannual investment program using a socio-climate evaluation tool that integrated the I4CE methodology alongside social impact measurements (Ville de Clermont-Ferrand, 2021[22]). The climate evaluation tool uses a decision tree inspired by I4CE's methodological approach. The social tool estimates the project contribution to the reduction of social inequalities, social inclusion and social mix, territorial balance, and user and citizen involvement. The results of these two ratings are consolidated and used during budget debates to help elected officials to make informed decisions. Adoption of this approach helped elected officials to be more aware of the cross-cutting nature of climate and social issues and to make better-informed and reasoned public investment decisions.

I4CE's climate budgetary assessment methodology has received interest from a wide array of stakeholders. For example, ADEME[9] incorporated the climate budgetary assessment into their 2021 Cit'ergie[10] label criteria, thereby encouraging more municipalities to adopt green budgeting in order to receive the label (ADEME, 2021[23]). Additionally, France Urbaine (a co-creator of the methodology) convened a working group to further disseminate the tool to interested French municipalities and to assist them in implementing it (France Urbaine, 2020[24]). An internal survey, carried out by France Urbaine in April 2022, identified that at least nine members had already carried out a climate budgetary assessment and a further 14 were considering it. The survey also showed the strong interest in extending the budgetary assessment to other environmental and/or social axes including biodiversity, gender equality, and the SDGs (France Urbaine, 2022[25]).

The Climate Budget Approach: Linking carbon budgets to financial budgets

Developed by the city of Oslo (Norway) in 2017, the climate budget is a pioneering approach for budgeting municipal carbon dioxide equivalent (CO_2e)[11] emissions alongside municipal finances. A municipality's climate budget transparently outlines what actions the city will take to lower their emissions, who is going to carry out those actions, how the impact of the actions will be reported and how much it will cost.

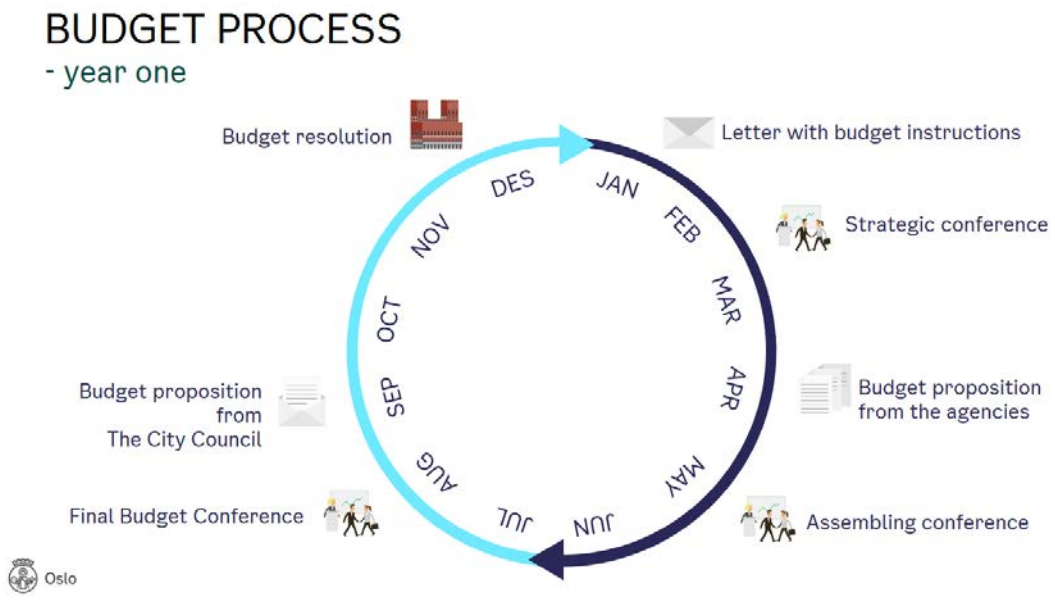
Oslo developed the climate budget approach to unify its climate governance system and mainstream climate action across the entire administration. Preparing the climate budget is the responsibility of the municipality's Deputy Mayor of Finance, who collaborates closely with the Department of Environment, the Department of Transport, and the Oslo Climate Agency, a municipal body. The Oslo Climate Agency assists with evaluating the emissions impact of proposed measures (both individually and as a group of measures) and proposes additional measures.

Each year a short-term emissions cap is calculated, taking into account Oslo's long-term climate goals to reduce greenhouse gas emissions by 95% from 2009 levels by 2030. This cap encompasses scope one emissions only. After the annual emissions cap is set, municipal departments are encouraged to submit project proposals detailing how they will reduce their emissions to meet these targets, the timeline for these reductions, the unit responsible for implementing these actions, and their cost. Not all of the measures proposed have an emissions reduction impact; some are "soft" measures that focus on communication and climate change education. In the 2022 Climate Budget, 15 of 44 measures had quantifiable CO_2e emissions reduction impacts. The climate budget covers the geographic area of the city, not just the municipal administration's emissions, and includes all sectors of the economy. Thus, the budget includes all actions taken by the city government, as well as county and national levels of government, businesses and civil society.

To monitor progress on the mitigation measures, all responsible departments report on the status of implementation and execution of their actions. A barometer with 17 monitoring indicators is published 3 times a year on the city's website to transparently track the municipality's progress.

This entire process happens as an integral part of the annual fiscal budgetary cycle and the proposed emission reduction measures are included in the draft budget submitted to City Council (Figure 3.4). In this way, the city can only approve spending plans that have a realistic change of delivering the required greenhouse gas emission reductions and are consistent with the municipality's climate strategy.

Figure 3.4. Oslo's Climate Budget Process



Source: Energy Cities (2020[26]), *Climate Budget: A Dialogue with Oslo*.

Oslo's climate budget approach has been widely disseminated and has inspired several other municipalities including Bergen, Hamar, and Trondheim in Norway, Vienna (Austria), and Issy-les-Moulineaux (France) (Box 3.5). Currently, Oslo is working with the organisation C40 Cities on a climate budget pilot programme to disseminate its approach to twelve other cities globally (Box 3.5).

Box 3.5. Issy-les-Moulineaux's Climate Budget

Issy-les-Moulineaux is the first French municipality to have adopted a climate budget inspired by Oslo's approach. The municipality highlights two reasons in particular as to why they chose this green budgeting approach. First, because this method breaks down a long-term goal (net-zero by 2050) into shorter term goals which motivates action today and not tomorrow; and second because it fosters collaboration amongst all local actors (both public and private) to reduce emissions which is key for the municipality where over one-third of emissions come from businesses.

For their first climate budget, adopted in February 2021, the municipality set an annual cap of 125 000 tonnes of CO2 equivalent, a 3.5% reduction from 2020, which was broken down by sector (residential, industry, services, etc.). The climate budget identifies measures and instruments at all levels of government that will contribute to reducing the municipality's emissions and the municipality

actively co-operates with Grand Paris Seine Ouest and Metropole du Grand Paris to develop and co-ordinate measures in the budget.

To report on its progress, the municipality developed an online, interactive dashboard with indicators that are frequently updated.

Source: Ville d'Issy-les-Moulineaux (2022[27]), *Un budget climat pour agir*, https://www.issy.com/decouvrir-issy/agir-pour-le-climat/lutte-contre-le-changement-climatique/un-budget-climat-pour-agir#:~:text=S'inspirant%20de%20la%20capitale,%2C%20in%C3%A9dite%2C%20exemplaire%20et%20collective (accessed on 18 April 2022).

Box 3.6. C40 Climate Budget Pilot

The C40 Cities Climate Leadership Group launched a new Climate Budget Pilot in September 2021. The first phase is planned for 2021-22. Thirteen C40 cities (Barcelona, Berlin, London, Los Angeles, Milan, Montreal, Mumbai, New York, Oslo, Paris, Rio de Janeiro, Stockholm and Tshwane) are directly involved in the project and will share work on how to mainstream climate consideration in every municipal decision through new budgeting practices. The project is led by the city of Oslo which has been working on carbon and climate budgets for a few years. The involved cities will work with Oslo on investigating, developing, implementing and further improving the use of climate budgets as a key governance tool to reach the GHG emissions reduction targets.

The first step of the work will be to develop a common understanding of climate budgets and analyse the best way to implement it in a city. Throughout 2022, the project will focus on the definition of strategic priorities, the monitoring and the evaluation of a regular climate budgeting practice, and analysing how climate budgets can be adapted and implemented in different cities, according to their situational context. To disseminate information and learnings from the work sessions, C40 has launched both a newsletter and a specific page on their Knowledge Hub dedicated to climate budgeting. C40 is experiencing great interest from cities on this initiative, and the organisation is aiming to launch a programme on climate budgeting after the pilot concludes.

Source: C40 (2021[28]), *Climate Budgets: Why Your City Needs One*, https://www.c40knowledgehub.org/s/article/Climate-budgets-why-your-city-needs-one?language=en_US.

City and Local Environmental Accounting and Reporting: The CLEAR method

The City and Local Environmental Accounting and Reporting (CLEAR) method was developed as the first European environmental accounting methodology applicable to subnational governments (Comune di Ferrara, 2003[29]). It was also the first green budgeting methodology to be developed explicitly for subnational governments. A group of 18 Italian municipalities and provinces, as well as the international association of mayors for sustainable development, Les Eco Maires, participated in the project which took place between October 2001 and October 2003 and was 50% co-funded under the European Commission's LIFE-Environment programme.

The objective of the project was to develop a transferable environmental accounting tool to improve environmental decision-making at the subnational level. The tool was also intended to enhance multi-stakeholder engagement processes and existing environmental management systems by providing greater legitimacy to environmental accounting and reporting, which was still an underexplored area of work at the time. Its value added was to bridge the fiscal and environmental domains and serve as a tool

to visualise and measure all local commitments and policies with an environmental impact using both physical and financial indicators. Since its experimentation in 2001-03, several Italian municipalities have continued to release *ecobilancio* developed based on the CLEAR method. The most recent ones include the municipalities of Bergeggi (2022), Varese Ligure (2019), and Reggio Emillia (2018).

The CLEAR methodology is comprised of three steps (Comune di Ferrara, 2003[29]):

- The first step involves identifying the commitments and objectives of the administration that have an environmental impact. Once the relevant environmental commitments have been identified, it is possible to flag specific policy programmes and projects being undertaken to fulfil them. These policies and programs are then further classified based on a list of key "macro-competences" of Italian municipalities and provinces linked to the environment (e.g. waste, water treatment, urban development). The final output of this step is a list, for each macro-competence, of the municipality's or province's policies linked to achieving their commitments related to the environment. Using this list, it is possible to then track and calculate the amount of financial resources spent on each macro-competence by a municipality or province and to produce a "financial report".
- The second step is to build a parametric system that allows for the measurement of the effects, and verification of the outcomes, of policies implemented to meet the commitments and objectives identified in Step 1. The methodology outlines several possible sources of indicators but stops short of providing a standardized set for all municipalities or provinces to use, noting the importance of accounting for individual local contexts. The chosen set of indicators is then mapped to the list of macro-competence policies obtained in Step 1, such that each policy is linked to an indicator. With this information, it is possible for each municipality or province to produce an “environmental report” showing the evolution in the indicators from year to year.
- The third step involves incorporating the results from the second step into the local budgetary decision-making process. By combining the financing and environmental reports, local governments are then able to see how much money they are spending towards achieving their environmental commitments and what the impact of that expenditure is on achieving those targets. This information can then be used to reorient budget expenditure or to reassess policies that weren’t having the desired impact.

References

ADEME (2021), *Cit’ergie - Catalogue des 61 mesures du label*, https://territoireengagetransitionecologique.ademe.fr/wp-content/uploads/2021/09/Citergie_catalogue-2021.pdf (accessed on 8 April 2022). [23]

ADEME (2021), *Programme Territoire Engagé Transition Écologique*, https://territoireengagetransitionecologique.ademe.fr/referentiel/organisation-interne/. [33]

Ardi, C. and F. Falcitelli (2007), *The Classification of Resource Use and Management Activities and Expenditure - CRUMA*, Italian National Institute of Statistics (ISTAT), Rome, https://unstats.un.org/unsd/envaccounting/LondonGroup/meeting12/CRUMA.pdf (accessed on 8 February 2021). [32]

Autonomous Community of Andalusia (2021), *Incidence Report of the Climate Change Budgetary Indicators*, https://www.juntadeandalucia.es/export/presupuestos2021/clima/clima.pdf (accessed on 6 June 2022). [7]

Autonomous Community of Andalusia (2020), *Estudio para integrar la perspectiva de género en el Presupuesto Verde de la Junta de Andalucía*. [9]

Autonomous Community of Andalusia (2020), *Guía de integración de la perspectiva medioambiental en el presupuesto de la Junta de Andalucía*. [5]

Boletín Oficial del Estado (2018), "Ley 8/2018, de 8 de octubre, de medidas frente al cambio climático y para la transición hacia un nuevo modelo energético en Andalucía", *Boletín Oficial del Estado* 269, https://www.boe.es/buscar/pdf/2018/BOE-A-2018-15238-consolidado.pdf (accessed on 18 January 2021). [6]

C40 (2021), *Climate Budgets: Why Your City Needs One*, https://www.c40knowledgehub.org/s/article/Climate-budgets-why-your-city-needs-one?language=en_US. [28]

Cabannes, Y. (2020), *Contributions of Participatory Budgeting to Climate Change Adaptation and Mitigation*, United Cities and Local Governments, https://issuu.com/uclgcglu/docs/2020_9_pb_contributions_to_climatechange_adaptatio (accessed on 7 May 2021). [14]

CEREMA (2022), *The Territorial Climate-Air-Energy Plan (PCAET)*, http://outil2amenagement.cerema.fr/le-plan-climat-air-energie-territorial-pcaet-r438.html. [34]

City of Lisbon (2021), *Lisbon Participates (Lisboa participa)*, https://op.lisboaparticipa.pt/ (accessed on 7 May 2021). [16]

City of Paris (2021), *2022 Draft Budget*, https://cdn.paris.fr/paris/2022/02/10/a49b1b083d7821ada12971fa5940b701.pdf (accessed on 15 April 2022). [21]

City of Vienna (2022), *The Vienna Climate Team (Ab jetzt Ideen beim Wiener Klimateam einreichen)*, https://www.wien.gv.at/umwelt-klimaschutz/klimateam.html. [18]

Comune di Ferrara (2003), *Metodo CLEAR City and Local Environmental Accounting and Reporting*, http://www.agenda21.ra.it/clear-life/05risultati/metodoclear.pdf (accessed on 18 April 2022). [29]

Département de la Mayenne (2021), *Budget vert 2ème édition*, https://lamayenne.fr/sites/lamayenne.fr/files/telechargements/Budget_vert_web.pdf (accessed on 8 April 2022). [30]

Département des Alpes-Maritimes (2021), *Budget 2022 - Département des Alpes-Maritimes*, https://www.departement06.fr/budget/budget-2022-43376.html (accessed on 8 April 2022). [31]

Direzione Generale dei Servizi Finanziari (2021), *Ecobilancio 2021 della Regione Sardegna*, https://www.regione.sardegna.it/j/v/2592?&s=1&v=9&c=10803&n=10&nodesc=1 (accessed on 6 April 2022). [4]

Energy Cities (2020), *Climate Budget: A Dialogue with Oslo*. [26]

Eurostat (2020), *Glossary: Classification of Environmental Protection Activities (CEPA)*, Eurostat Statistics Explained, https://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Classification_of_environmental_protection_activities_(CEPA) (accessed on 8 February 2021). [35]

France Urbaine (2022), *Internal Survey*. [25]

France Urbaine (2020), "Les villes peuvent maintenant évaluer l'impact climat de leur budget", https://franceurbaine.org/actualites/les-villes-peuvent-maintenant-evaluer-limpact-climat-de-leur-budget (accessed on 11 June 2021). [24]

Generalitat de Catalunya (2022), *Green Budgets: Report on the Climate Perspective in the Budget of the Government of Catalonia*, https://aplicacions.economia.gencat.cat/wpres/AppPHP/2022/pdf/VOL_P_CLI.pdf (accessed on 3 May 2022). [10]

I4CE (2020), *Évaluation climat des budgets des collectivités territoriales: guide méthodologique*, Institute for Climate Economics, Paris, https://www.i4ce.org/download/evaluation-climat-des-budgets-des-collectivites-territoriales-guide-methodologique. [1]

İpek, E. (2018), "New approaches in public budgeting", in Açıkgöz, B. (ed.), *Public Economics and Finance*, IntechOpen, London, https://doi.org/10.5772/intechopen.82371. [17]

Junta de Andalucía (2020), "Número 111, Jueves, 11 de junio de 2020", *Boletín Oficial de la Junta de Andalucía* 111, pp. 6-15, https://www.juntadeandalucia.es/boja/2020/111/BOJA20-111-00010-5828-01_00173223.pdf (accessed on 18 January 2021). [8]

La Région Occitanie (2021), *Budget Primitif 2022*. [3]

Lommere, P. and A. Beretta-Delmarre (2022), "Un budget climatique pour les collectivités ? Retour d'expérience de la Métropole Européenne de Lille et la Ville de Lille", Construction21. [20]

Lvovna Gelman, V. and D. Votto (2018), "What if citizens set city budgets? An experiment that captivated the world - Participatory budgeting - Might be abandoned in its birthplace", World Resources Institute, https://www.wri.org/insights/what-if-citizens-set-city-budgets-experiment-captivated-world-participatory-budgeting (accessed on 7 May 2021). [15]

Métropole Européenne de Lille (2021), "Budget climatique à la MEL", https://www.lillemetropole.fr/sites/default/files/2021-02/20210219_analyse_budget_climatique_BP2021.pdf (accessed on 5 May 2021). [19]

OECD (1998), *OECD DAC Rio Markers for Climate - Handbook*, OECD, Paris, https://www.oecd.org/dac/environment-development/Revised%20climate%20marker%20handbook_FINAL.pdf. [11]

Région Grand Est (2021), *Grand Est Budget 2022*, https://www.grandest.fr/wp-content/uploads/2022/01/grand-est22-budget-2022-papok.pdf (accessed on 8 April 2022). [2]

Scottish Government (2021), *Carbon Assessment of the Scottish Budget 2021-22*, https://www.gov.scot/publications/carbon-assessment-scottish-budget-2021-22/documents/ (accessed on 8 April 2022). [13]

Scottish Government (2020), *Carbon Assessment of the 2020-21 Budget*, Scottish Government, https://www.gov.scot/publications/carbon-assessment-budget-2020-21/ (accessed on 19 January 2021). [12]

Ville de Clermont-Ferrand (2021), “Evaluation socio-environnementale d’une programmation pluriannuelle d’investissement Retour d’expérience de la Ville de Clermont-Ferrand”, https://www.adcf.org/files/AdCF-Direct/2021.10-Clermont-Ferrand_Evaluation-socio-environnementale-PPI.pdf (accessed on 15 April 2022). [22]

Ville d’Issy-les-Moulineaux (2022), *Un budget climat pour agir*, https://www.issy.com/decouvrir-issy/agir-pour-le-climat/lutte-contre-le-changement-climatique/un-budget-climat-pour-agir#:~:text=S'inspirant%20de%20la%20capitale,%2C%20in%C3%A9dite%2C%20exemplaire%20et%20collective (accessed on 18 April 2022). [27]

Notes

[1] The departments of Alpes-Maritimes and Mayenne have both carried out a green budgeting exercise based on the I4CE methodology (Département des Alpes-Maritimes, 2021[31]; Département de la Mayenne, 2021[30]).

[2] I4CE is a Paris-based think tank, founded by the French National Promotional Bank Caisse des Dépôts and the French Development Agency, with expertise in economics and finance with the mission to support action against climate change.

[3] CEPA refers to the Classification of Environmental Protection Activities classification system. It is used to classify activities, products, expenditure and other transactions whose primary purpose is environmental protection (Eurostat, 2020[35]).

[4] CRUMA refers to Classification of Resource Use and Management Activities and Expenditure. Developed by ISTAT (Italian National Institute of Statistics) it classifies activities and expenditures related to natural resource use and management (Ardi and Falcitelli, 2007[32]).

[5] The ecobilancio for 2021 covered 12 sectors: inland water use and management; forest use and management; protection and rehabilitation of soil, groundwater and surface water; protection of biodiversity and landscape; waste management; use and management of non-renewable energy raw materials; wastewater management; research and development; air and climate protection; wildlife use and management; radiation protection; noise and vibration abatement.

[6] Officially entitled “Law 8/2018, of October 8, on measures against climate change and for the transition to a new energy model in Andalusia”.

[7] The city of Paris, the city of Lille, the metropolis of Lille, the Eurométropole of Strasbourg and the metropolis of Lyon.

[8] The PCAET is a strategic and operational planning tool which allows local governments to holistically address air, energy and climate issues within their territory (CEREMA, 2022[34]).

[9] ADEME refers to the French Agency for Ecological Transition, which is active in the implementation of energy, environment, and sustainable development policy (ADEME, 2021[33]).

[10] Cit'ergie refers to an ADEME management and certification program that rewards communities for the implementation of an ambitious climate-air-energy policy (ADEME, 2021[23])

[11] CO2e refers to carbon dioxide equivalent and encompasses carbon dioxide (CO2) emissions, nitrous oxide (N2O) emissions, and methane (CH4) emissions.

4 Subnational green budgeting guidelines

The stocktake of existing subnational green budgeting practices in the OECD and EU, and the two case studies of Brittany and Venice, provide valuable insights into the prerequisites and mechanisms necessary to develop and implement a green budgeting practice. These insights helped to develop a set of six key guidelines for regions and cities to use in developing and launching their own subnational green budgeting practice. They are accompanied by recommendations for supranational bodies, national governments, and subnational governments as well as by a self-assessment tool that subnational governments can use to assess their strengths and potential gaps for launching a green budgeting practice.

The stocktake of existing subnational green budgeting practices in the OECD and European Union (EU), and the two case studies of the region of Brittany and the city of Venice (Chapters 5 and 6), provide valuable insights into the pre-requisites and mechanisms necessary to implement and develop a green budgeting practice at the subnational level. They are summarised in this Chapter as a set of six key guidelines for subnational governments of all types to use in launching their own green budgeting practice or strengthening an existing one. Each guideline is accompanied by a series of recommendations differentiated for the international community, and national and subnational governments. Furthermore, the guidelines are also accompanied by a self-assessment tool in Excel format[1] that subnational governments can use to assess their strengths and potential gaps for launching a green budgeting practice (Box 4.1).

Box 4.1. Subnational green budgeting self-assessment tool

The self-assessment tool (SAT) allows any subnational government to evaluate where it stands across seven green budgeting dimensions: the context; diagnostic tools and indicators; political and administrative commitment; budgeting practices; organisation; revenue approach; and scientific approach. For each dimension there is a series of sub-criteria against which the user ranks their level of experience ranging from “advanced” to “none”. The answers given for each sub-criteria translate to a numerical score between 0 and 3 (3 corresponding to advanced), which is then combined to produce an average score for each of the seven dimensions. On the “Synthesis & General Information” tab, the user can then see a visualisation (radar graph) of their average scores for all seven dimensions, allowing them to identify their strengths and gaps with respect to green budgeting in a user-friendly format.

For more information see Annex A.

The guidelines and recommendations outlined in this Chapter were developed to help regions and cities overcome the methodological challenges, operational challenges, resource challenges, and political challenges outlined in Chapter 1, and to launch a successful green budgeting practice that endures over time. Recommendations are provided for national and subnational governments, as well as for the international community, as all of these stakeholders play an important role in fostering subnational green budgeting.

Table 4.1. Six key guidelines to start or develop a green budgeting exercise at the regional and local levels

Guidelines	Detailed guidelines
1. Conduct a diagnostic of local environmental and climate challenges as a pre-requisite to launching a green budgeting practice	• Prepare a transversal territorial diagnosis that is consistent across government levels and in line with national and regional planning schemes • Use the diagnostic to define specific objectives for the territory as well as associated performance indicators • Include all stakeholders in the process of defining green objectives and performance indicators
2. Ensure strong, high-level involvement and support from both the administrative and elected sides of government	• Support green budgeting practices through strong political involvement and support • Ensure the implementation of the necessary means thanks to high-level administrative management

Guidelines	Detailed guidelines
3. Ensure the practice relies on a robust, shared scientific basis to facilitate public trust and ensure the practice can adapt to changing scientific evidence	• Develop shared repositories of climate and environmental science and assessment methodologies
4. Adopt a step-wise approach to implementing green budgeting in order to learn from previous steps and reinforce the alignment of the practice with local strategic priorities.	• Gradually widening the scope of green budgeting helps to get the process started • Cross green budgeting with the government's other priority budgeting approaches and green initiatives
5. Integrate the green budgeting practice into existing public financial management procedures and tools to help ensure the practice endures	• Budget procedures and tools must be adjusted to integrate the green budgeting approach • Integrate green budgeting into internal and external audit procedures
6. Include revenues within the scope of the green budgeting practice to ensure the entire budget aligns with green objectives	• Ensure sufficient permanent funding and the mobilisation of all available green revenue sources for climate and environmental action • Analyse the environmental and climate impact of revenue sources

Guideline 1. Conduct a diagnostic of local environmental and climate challenges as a prerequisite to launching a green budgeting practice

Green budgeting practices must be based on cross-cutting diagnoses of a regional and local environmental and climate challenges that specify the subnational government's green objectives, the financial means required to implement these objectives, and the indicators that will be used to monitor progress.

To carry out these diagnoses and define these indicators, subnational governments must be able to rely on clear assignments of responsibilities, have sufficient financial and technical resources and have access to scientific information adapted to their characteristics. Robust governance tools are also needed to manage all the internal and external interactions linked to the green budgeting project.

Rationale

Subnational governments play a key role in policy areas directly related to environmental protection such as biodiversity protection, renewable energy, circular economy, water and sanitation, etc. Through these responsibilities and local knowledge in these areas, they can develop ambitious policies to limit environmental damage, mitigate and adapt to climate change, and preserve or restore natural resources. But other responsibilities such as transport, housing, urban planning or economic development, can have opposite consequences and thwart the environmental objectives of the territory while responding to other economic, social or development constraints.

It is thus necessary to develop environmental planning documentation that tries to assess these impacts, be they positive, negative, or neutral, and evaluates their territorial consequences in a comprehensive manner. This is the case, for example, in urban development plans or in regional land use planning and development plans. These documents frequently include a comprehensive territorial environmental diagnosis, and even identify and quantify the green objectives for a given territory. However, setting these green objectives and identifying relevant performance indicators in the planning documentation is not always required by regulation and instead can be left up to the discretion of regional and local governments.

In most cases, setting and meeting environmental and climate objectives remains a national government prerogative, often included within international commitments. The description of the "environment" responsibility of subnational governments as it appears in national regulations can be brief and limited to some specific tasks (e.g. natural heritage inventories, delimitation of protected areas, etc.) instead of giving a "general clause of competence" regarding environmental matters to subnational governments in their jurisdictions. Obligations imposed on subnational governments regarding the environment are therefore listed as specific sectoral responsibilities and frequently reference the means necessary to perform these tasks (for instance setting up a carbon low-emission zone within large cities) rather than the expected results (for instance reducing greenhouse gas [GHG] emission on the territory). When performance obligations are established, their time schedule often largely exceeds the electoral mandate period and they lack long-term vision and requirements.

Despite this, some subnational governments design environmental and climate strategies and set precise and ambitious green targets. These commitments can be laid out in subnational planning documentation. Such environmental and climate action plans are instrumental to include quantified and binding objectives. This is a complex process from a political point of view because subnational governments make commitments on strategies that they do not necessarily fully control, as the strategies also rely in part on independent third parties, and for which they do not always have the skills or necessary means to implement. Moreover, their green initiatives and efforts can be thwarted by the actions of other governments (both within their country and internationally) and, conversely, subnational governments must not achieve their goals by transferring their own constraints on other territories, by developing for instance carbon-intensive imports.

Before starting a green budgeting practice, subnational governments need to have prepared a comprehensive environment and climate strategy, that includes measurable targets and performance indicators, and have integrated it into their planning documentation. In doing so, subnational governments will have an idea of where they stand and where they want to go with respect to their environment and climate policy. This clarity is necessary before launching a green budgeting exercise, as the essence of green budgeting is to make use of the tools of budgetary policy-making to achieve environmental and climate objectives. Therefore, having said objectives, and ensuring that they are shared and understood by all internal and external stakeholders and that they are consistent with national commitments, is a prerequisite for starting green budgeting.

Prepare a transversal territorial diagnosis that is consistent across government levels and in line with national and regional planning schemes

Though sometimes isolated as a specific competence, generally the "environment" competence (referring to environmental preservation and restoration) is shared between levels of government and nested within a subnational government's operational competences.

Environmental planning, for example, is most often a regional responsibility, in decentralised and regionalised countries. In countries where this is the case, all municipal governments must subscribe to a regionally-defined approach and integrate its principles into their respective programming documents. Consistency between the planning documents of different levels of governments must therefore be ensured to optimise efforts across the region and avoid any form of institutional competition between subnational governments in a given territory.

This planning documentation frequently includes environmental diagnostics which are a prerequisite for green budgeting implementation. The diagnosis should be territorial, in order to consider regional and local specificities, while also being co-ordinated among subnational levels (in countries with multiple tiers of subnational government) and consistent with national and international environmental and climate objectives.

Objectives of the territorial climate and environmental diagnosis

The diagnosis requires a comprehensive approach that measures the state of a given territory across all environmental and climate axes: climate adaptation, climate mitigation, biodiversity, circular economy, water use and pollution, and air quality. The diagnosis should also associate the key actors within a given territory, both public and private, to understand their impact – be it favourable, neutral or harmful – their economic model, and their interactions within the territory.

The diagnosis should be based on similar work already carried out at higher levels of government in order to be consistent across all levels of government but also with national and international objectives and requirements (e.g. Greenhouse Gas Emissions Reduction Targets). The co-ordination between levels of government should also aim to avoid creating an undue administrative burden.

The documentation resulting from the diagnosis should be concise and provide a quantified measurement of the state of the local or regional environment to give a clear vision of the territory's weaknesses and strengths and serve as a starting point for further action. Through the diagnosis, a subnational government positions itself as a central player in its territory, and therefore, widely communicating on the results of the diagnosis is essential to enhance buy-in from local stakeholders and ensure that the regional or local government formally commits itself to the targets it sets.

Comments on practices

During the last decade, national governments have developed various planning and contractual instruments to serve territorial environmental objectives. Generally, these instruments guide subnational governments on how to carry out territorial environmental and climate diagnostics and set green objectives, as well as provide methodologies on how to achieve said objectives. However, in some cases, these instruments have increased administrative burdens without always simplifying territorial action or improving the co-ordination between different levels of government.

Integrated approaches to defining subnational green objectives frequently remain to be built to avoid redundancy between existing tools, guarantee their consistency, and lighten the administrative load of subnational governments. Regulatory planning documentation imposed on subnational governments by national governments are not always operational; the requirements do not necessarily fit into time horizons that respond to the scale of the work expected, to the scale of environmental and climate emergency that the governments are facing, or to their electoral mandates.

Recommendations for national governments

- Ensure that each subnational government has sufficient regulatory means to boost or co-ordinate policies for environment and climate action within its territory. The cross-cutting role of subnational government regarding environmental policies in its jurisdiction should be acknowledged.
- Consolidate legal and regulatory contractual and planning requirements to help subnational government define transversal green projects, avoid competition between governments, and reduce the administrative burden.
- Provide diagnostic tools and technical assistance to subnational governments, which includes cross-disciplinary expertise on environmental and climate issues and territorial engineering[2] services for smaller subnational governments such as small municipalities or municipal associations.

Recommendations for subnational governments

- Co-ordinate a comprehensive territorial environment and climate diagnosis and pool efforts between the different levels of government to avoid redundancies or inconsistencies.
- Make use of technical climate and environmental expertise and technical assistance within national government agencies and departments, especially territorial engineering assistance.
- Involve all territorial stakeholders in the development of the diagnosis in order to share findings and ensure an accurate understanding of local issues.
- Communicate widely on the results of the diagnosis and the resulting environmental and climate strategy to generate buy-in from local stakeholders and to commit subnational governments on the results to be reached.

Use the diagnostic to define specific objectives for the territory as well as associated performance indicators

Green budgeting makes use of budgetary tools and procedures to assist subnational governments in achieving their green objectives. The territorial diagnosis, through the identification of local challenges, is a starting point for setting up the objectives and associated performance indicators that will serve as the basis of a green budgeting practice. Defining relevant performance indicators comes with challenges that should not be overlooked.

Objectives of quantified targets

The purpose of performance indicators is not to compare or benchmark subnational governments but to track the progress of a given territory towards a target and to promote the co-ordination of a government's action with that of other levels of government, with other approaches (climate, air, energy, etc.) and with the action of other government departments (planning, transport, etc.).

Quantified environmental and climate performance indicators establish an initial state and a target to reach and then help to monitor changes over time and the progress made towards reaching a target. Indicators must therefore be sufficiently precise and rely on data that is updated frequently and available over time. The green objectives linked to the performance indicators should be long-term (e.g. reduce GHG emissions to net-zero by 2050) but also include milestones to be reached within local electoral mandates. This breakdown of long-term green objectives into shorter-term milestones is an integral part of the Climate Budget methodology outlined in the stocktake in Chapter 3.

Subnational governments can find guidance on how to define relevant climate and environmental territorial indicators from international organisations (OECD, n.d.[1]; 2021[2]; Eurostat, 2021[3]) and national organisations, such as national statistical institutes or national environmental agencies. For example, INSEE, the French national statistical agency produces a set of Territorial Sustainable Development Indicators. The data for each territorial indicators corresponds to the 17 United Nations Sustainable Development Goals and is made available for different geographical levels: municipalities, departments, and regions (INSEE, 2022[4]). ISTAT, the Italian National Statistical Agency has also developed a collection of statistical indicators for monitoring the Sustainable Development Goals in Italian regions and autonomous provinces (ISTAT, 2020[5]).

Comments on practices

Quantified environmental indicators are not systematically available or easy to interpret within the planning and programming documents of subnational governments. When these indicators are defined, public information on the government's compliance with an expected trajectory within their electoral mandate is

not always easily accessible. A systematic and complete evaluation of the means necessary to reach the targets within the specified timeframe is also frequently lacking.

Public information often focuses on concrete achievements (number of kilometres of new bicycle paths constructed or the increase in the number of electric buses on the road) favourable to the environment while the information on expected results (e.g., decrease in the territory's greenhouse gas emissions) can be scattered among several different documents. This is partly linked to the fact that the targets can be difficult to measure (due to the lack of territorialised data) and to achieve, in particular because of the many stakeholders influencing the results. It is thus easier, from a political point of view, to set targets for the subnational government as an entity rather than targets for the territory as a whole, which would imply setting objectives and committing to results that partly depend on the action of third parties. This situation can create an escalation of "who has spent the most" for the environment and climate rather than who has achieved the most.

Among existing subnational green budgeting practices, there is a tendency to define clear and regularly monitored green objectives directly within budget documentation. This is the case in Oslo, which has a 2030 emissions reduction target that is broken-down into annual targets in their annual Climate Budget (C40, 2022[6]). Broadly speaking, however, subnational governments are still not systematically quantifying the medium and long-term financial needs associated with achieving their green targets, although there are some promising studies in progress supported by public or private environmental structures.

Recommendations for national governments and the international community

- Provide methodological support to subnational governments to define relevant local environmental and climate indicators and improve the availability, dissemination, and updating of territorialised environmental and climate data.
- Set up technical assistance and territorial engineering service for subnational governments or support initiatives that offer this type of service (think tanks, universities, international organisations).

Recommendations for subnational governments

- Rely on recognised methodologies to define, monitor, and communicate on the environmental and climate indicators chosen to track the progress made towards meeting subnational green objectives.
- Measure and quantify the overall financial commitment needed to achieve stated environmental and climate objectives within a multi-year projection, in order to ensure that these objectives can be realised and that sufficient public revenues are available.

Box 4.2. The DK2020 project for Danish municipalities

The DK2020 Danish Municipalities project was launched in 2019 with 20 Danish municipalities, to develop municipal climate action plans in line with the Paris Agreement objective of carbon-neutrality by 2050. The initiative was extended in 2021 to include nearly all Danish municipalities and the five Danish regions, thanks to a partnership with Danish Municipalities KL (the Danish Association of Municipalities). Finalised climate action plans for all members are expected by mid-2023.

Through the DK2020 project, Danish municipalities receive help from C40 Cities, CONCITO (a Danish climate think tank) and Realdania (an environment non-profit). C40 Cities provides participating subnational governments with a climate action planning framework and CONCITO provides an analysis of existing practices among Danish municipalities. Realdania provides methodological and scientific

support. The sharing of best practices and resources between municipalities is a key aspect of the project.

Source: Realdania (2021[7]), *DK2020*, https://realdania.dk/projekter/dk2020 (accessed on 2 May 2022).

Include all stakeholders in the process of defining green objectives and performance indicators

Green objectives and their associated performance indicators must cover all green domains, and be both consistent with national and international long-term goals and specific to the subnational government that is defining them. The process of defining subnational green objectives and performance indicators should also involve all of the territory's stakeholders in the process.

Objectives

Green objectives and indicators should relate both to the direct action of a subnational government (e.g. measuring the evolution of GHG emissions linked to its own activities) but also to its indirect actions (e.g. measuring the evolution of GHG emissions of the companies that receive subsidies or contracts from the government). Green objectives may thus depend on third parties that are not financially linked to the subnational government (e.g., the evolution of GHG emissions of companies established in a given territory but that have no financial link with the government) but potentially fall under its regulatory jurisdiction (in terms of town planning, land use planning, etc.) and have institutional relationships with the subnational government.

The green objectives of a government must therefore be developed and shared with the territorial stakeholders since their buy-in and support is crucial to the achievement of the objectives.

Comments on practices

The identification and inclusion of all territorial stakeholders (local authorities but also companies, associations, and individuals) in carrying out a territorial environmental and climate diagnosis and defining performance indicators helps to understand the economic model of each of the stakeholders and the local ecosystem. It also helps to reconcile potentially divergent environmental, social and economic interests.

There are several examples of comprehensive stakeholder engagement practices for developing subnational climate and environmental objectives among OECD countries. In France, the region of Brittany organised a *Breizh COP*, based on the model of the United Nations Conference of the Parties, to construct its territorial climate and environmental strategy with the participation of the region's main socioeconomic stakeholders. In Norway, the city of Oslo has constructed a municipal carbon budget which requires cross-sectoral commitments from city's private and public organisations in order to reach the objectives (City of Oslo, 2021[8]).

Recommendations for subnational governments

- Associate third parties to the territorial diagnosis and the definition of indicators through continued collaboration and transparency on the methodology and the results.
- Define new territorial governance tools to improve stakeholder co-operation, improve conflict resolution, and capitalise on private-public partnerships.

Guideline 2. Ensure strong, high-level involvement and support from both the administrative and elected sides of government

Strong political and administrative involvement is necessary to start a green budgeting practice. The involvement of elected officials should be formal and public in order to give the project the necessary political weight. The involvement of the administration at the highest level is also essential to ensure that the necessary human and financial resources are in place to implement the green budgeting project.

Rationale

Budget construction, that is the choice and prioritisation of expenditure and revenue, is a central element in the implementation of the policy agenda of a subnational government. Despite the diversity of subnational organisation across the OECD, the budget construction process shares many similarities across jurisdictions.

The first step is the translation of a subnational government's policy agenda into orientations, programmes and actions. This policy agenda reflects the political project for which the executive officials have been elected. These programmes are then allocated to government departments or services. Based on these guidelines, and considering relevant legal and regulatory constraints, each department or service estimates their operating and investment needs for the financial period and submits their budget requests.

Budget arbitration is then carried out by elected officials, with the help of administrative personnel who provide information and perform simulations (considering the government's financial history and its actual or potential revenues) to ensure the feasibility and the compliance of the projected expenditures with budgetary and accounting standards. As a final step, the budget is voted on by elected officials and becomes binding for the administration.

For the revenue side of the budget, it is generally the Department of Finance who is in charge of putting together forecasts and providing other departments with information on projected revenues and resources. Though financial services are frequently called upon to find new revenues, elected officials pay keen attention to these projections as they directly influence the decisions they make on how to fund and finance their policy agenda (i.e. taxation vs services pricing, borrowing vs self-financing) and subsequently the ability of the administration to implement said policy agenda. Revenue raising decisions are also subject to legal and regulatory limitations as well as political constraints (especially as local elections approaches). Overall subnational governments tend to have more limited revenue raising autonomy, particularly relating to taxation.

The increasing complexity of standards that apply to subnational management, in particular to fiscal management as well as the diversity of fields and modes of public action have limited the budgetary and financial leeway of elected officials and given administrative officials a larger role in the budget construction process. Regarding revenues, the already limited autonomy of subnational governments in this regard has been accentuated in many countries by the efforts undertaken during the last decade (prior to the pandemic) to limit compulsory levies, public debt and deficits, the progressive redistribution of taxation between central governments and subnational governments, and the increase in fiscal equalisation mechanisms.

Green budgeting aims to integrate environmental and climate concerns throughout the budgetary process. As a result, the different stages of the budgetary process, for both expenditure and revenues, must then be adapted to incorporate this new green lens, from the setting of the policy agenda to the arbitration phase

and the final budget vote. Achieving this requires steadfast, high-level support from both political and administrative officials.

Support green budgeting practices through strong political involvement and support

A high-level of political involvement in a green budgeting practice illustrates the priority given to achieving ambitious and clearly defined climate and environmental targets. Although administrative officials are primarily the ones responsible for putting together a subnational government's budget, it is important to remember that the budget is above all a prerogative of elected officials. Elected officials are also accountable for the subnational budget and have to communicate on budget's choices to the citizens, both on the expenditure and revenues sides. Increasing the importance of climate and environmental considerations within the budgetary process, from the budget elaboration phase to arbitration, is therefore a project that must be driven by elected officials and fully supported by the head of the regional executive or the mayor. Such commitment was identified as a key to success among existing subnational green budgeting practices (Nordregio, 2020[9]; OECD, 2021[10]).

Objectives of high-level political involvement and support

By supporting the green budgeting practice, elected officials help reinforce the cross-cutting nature of the exercise by showing that green budgeting is not a project that concerns just the Department of Finance nor is it about only looking at projects with a direct environmental and climate impact, but rather it is a project that involves all departments and all government activities. Green budgeting goes beyond characterising the environmental and climate impact of expenditure and revenues (budget tagging), to include changes to the budget arbitration and follow-up processes, and as such, a green budgeting practice requires providing climate and environmental awareness and training to all elected officials (executive and deliberative assemblies) giving these issues an important place alongside social, economic or financial priorities of the government.

Supporting the project also demonstrates the willingness to accept the implementation cost of the project. These costs include human resource costs and costs associated with building the methodology, updating internal information technology (IT) systems, training staff, and ensuring consistency with the extra-budgetary policies (procurement, subsidies, regulatory production, etc.).

Comments on practices

The stock-take of existing subnational green budgeting practices and the two green budgeting case studies both identified having a high-level of political involvement and support as a key factor for the success of a green budgeting practice (Box 4.3). It was found in the Nordic countries where municipal practices of climate-sensitive budgets and carbon budgets have been developing for several years, in France where a growing number of municipalities and regions have undertaken climate budget evaluations, and in Spain with the Autonomous Community of Andalusia's holistic green budgeting approach.

Recommendations for national governments and the international community

- Promote green budgeting as part of the public sector's toolkit for achieving green objectives and ensure existing budget regulations and legislation do not hinder its adoption.
- Start or enhance green budgeting practices at national-level to develop a shared national-subnational government dynamic.
- Improve access to training and information for regional and municipal elected officials on the mechanisms and challenges of green budgeting by supporting organisations that promote and exchange knowledge on subnational government's green budgeting approaches.

Recommendations for subnational governments

- Adopt a political resolution to launch a green budgeting project that includes adequate reporting to the government's deliberative assembly on the project's progress.
- Ensure there is transparent and consistent promotion of the green budgeting practice through high-level political communication (head of the subnational government, elected official in charge of budget, elected official in charge of environment) to demonstrate the importance given to the practice and its cross-cutting nature.

Ensure the implementation of the necessary means thanks to high-level administrative management

Budget construction is frequently decentralised in subnational governments, with each department contributing to the process through the identification and assessment of its own operational and investment expenditure needs. A green budgeting practice therefore involves mobilising a broad set of internal government stakeholders, whose buy-in to the project is key to its success.

Objectives of high administrative involvement

Incorporating green budgeting into the budgetary process requires significant work, especially upfront work at the start of the exercise, from both the budget and environment departments, who must work together to specify the scope of the practice, define a methodology, and prepare an implementation strategy.

The first iteration of a green budgeting practice can be carried out in a relatively centralised manner. However, if the practice is to continue long-term, other governments departments cannot permanently remain on the side-lines as they will need to develop the internal capacity to be able to analyse the environmental and climate impact of their future budget requests. This requires all government departments to receive training on climate and environmental issues and on how to operationalise the green budgeting methodology, and subsequently for them to integrate this knowledge into their existing workflow.

Green budgeting often requires new operational data to be collected internally or from external partners and made available to the project team. Collecting this data requires the project team to analyse the various interactions of the subnational government with third parties. As a result, it can lead to changes in the way the subnational government and external partners work together, and result for example in changing contractual agreements between the government and third parties to include climate or environmental clauses.

A comprehensive green budgeting project therefore requires an evolution of the budgetary procedures and reporting systems, a possible adaptation of IT systems to capture and manage new data necessary for the process, an evaluation of the subnational government's relationships with third parties and potential changes to these contracts. Such changes cannot take place without a high-level of support and commitment from administrative officials, especially from the head of the regional and municipal administration. The executive management will have to ensure that the necessary human and financial resources are provided and, if necessary, propose a step-by-step approach, by widening progressively the scope of the environmental and climate axes covered and the operational services and entities involved in the exercise.

Comments on practices

A common characteristic of the subnational green budgeting practices identified in the stocktake is the involvement of high-level administrative officials, in particular the executive manager together with the budget and the environment managers, in the practice.

Recommendations for national governments and the international community

- Facilitate the dissemination of green budgeting at the subnational level by creating spaces for practitioners and experts to convene and share their experiences and best practices.
- Organise frequent seminars and trainings for senior members of subnational administrations to enhance their awareness, knowledge and understanding of climate and environmental issues and green budgeting practices, both national and international.

Recommendations for subnational governments

- Create a project governance structure that includes high-level administrative officials from a range of departments to support the transversal implementation of green budgeting.
- Entrust the overall supervision of the project to the senior management of the region or municipality.

Box 4.3. The green budgeting exercise in Brittany

In Brittany, the climate assessment of the budget was launched at the request of the regional President and supported by the Regional Vice-President in charge of Finance, Human Resources, General Resources, and European and International Affairs. The project was launched during a public event organised together with a public financial institution (*Banque des Territoires*) and a training institution specialised in the inclusion of scientific approach in decision processes (IHEST). Representatives of municipal governments, key Breton stakeholders, and the OECD were also involved as speakers during the event, which was an occasion to promote green budgeting, present an inventory of existing French and international practices which the region could learn from, and initiate a discussion, and initiate a discussion on the methodology and organisational structure to set up by the region for a rapid start (IHEST, 2021[11]). Following this symposium, steering bodies were set up according to a "project-based" organisation within the regional administration to direct the project.

The first phase of Brittany's green budgeting exercise took approximately six months and resulted in the definition of a reference framework for the climate budget and an initial comprehensive assessment of the region's 2020 closed accounts. In the second phase, the scope and methodology (perimeter, scientific hypothesis, integration into decision-making processes) set out in the first phase were finalised, and a process for applying the methodology to analyse the 2022 draft budget was defined.

Brittany's green budgeting practice exemplifies high-level transversal involvement of both political and administrative officials. The political side of the government is represented within the steering committee by the regional councillor in charge of the budget together with several other regional councillors and vice-presidents in charge of key regional policy domains. The Director General and the deputy Director General of the regional government also participate in the committee while operational direction is shared between the budget and environment managers.

Source: Brittany Case Study (Chapter 5); IHEST (2021[11]), *Vers une budgétisation verte en Bretagne : piloter la transition climatique et écologique*, https://www.ihest.fr/wp-content/uploads/2021/06/IHEST-UT2020-synthese.pdf.

Guideline 3. Ensure the practice relies on a robust, shared scientific basis to facilitate public trust and ensure the practice can adapt to changing scientific evidence

A shared scientific culture based on sound climate and environmental assumptions and evaluation methodologies is essential to enable the development of green budgeting at the sub-national level. International organisations and national governments have a role to play in disseminating this culture, notably by continuing to develop green and transitional taxonomies adapted to local and regional authorities, and by supporting networks of experts and research on these subjects. For their part, local and regional authorities must improve the level of training of staff and elected representatives in environmental and climate matters and be very transparent about the green budgeting approach undertaken and the methodologies used.

Rationale

Green budgeting aims to make better use of public budgets to achieve the climate and environmental targets of a government. There are numerous green budgeting tools that subnational governments can use such as green budget tagging, environmental and carbon impact assessments, green expenditure reviews, carbon budgets, and environmental fiscal reform, among others (see Chapter 2). All of these tools must rely on underlying scientific assumptions and proven assessment methods, which are not always available especially at the territorial scale, are often fragmented by environmental sector and are also evolving rapidly due to scientific progress and field observation and evidence. Environmental and climate science and data also require an internal understanding of these topics in order to be used effectively and credibly.

The scientific basis underlying a green budgeting practice must be robust, to adapt to rapidly changing scientific evidence, as well as shared throughout the administration. Achieving this requires developing or updating shared information and data repositories and providing frequent training on the latest climate and environmental science developments to both elected and administrative officials.

Environmental and climate scientific data is extensive but often scattered by field of intervention and the scientific recommendations are evolving rapidly due to advances in research and on the ground evidence. To promote green budgeting within the greatest number of subnational governments, a significant amount of work is needed to develop and maintain scientific hypotheses and assessment tools, conduct regular training on the latest environmental and climate science updates with administrative and elected officials, but also works and data sharing.

Develop shared repositories of climate and environmental science and assessment methodologies

In general, the material competences assigned to subnational governments vary considerably from one country to another; however, it is possible to identify some common trends. For example, regional governments are frequently assigned a general planning competence, often prescriptive through regional development plans, and which can include the environment without this area being an exclusive competence of this level of government. Economic development or professional training are also frequently regional responsibilities. In contrast, responsibilities such as the construction and maintenance of school buildings, urban public transport development, and water, sanitation, and waste management are frequently assigned to municipal governments.

Subnational governments do not always have in-house teams with sufficient scientific knowledge to assess all of the climate and environmental impacts of their actions in each domain within their field of competence (transport, waste management, economic development, etc.). This makes the dissemination of existing green budgeting methodologies and of the underlying scientific evidence used to classify the environmental or climate impact of expenditure and revenue items an important factor in enabling the spread of green budgeting among subnational governments.

Objectives of shared methodologies

A systematic internalisation, in each subnational government, of all skills for the production and continuous updating of environmental and climate scientific literature and assessment methodologies would be neither realistic nor efficient, especially for the smallest subnational governments. It is therefore essential for governments to be able to rely on shared repositories of climate and environmental knowledge and data, and green budgeting methodologies, adapted to their fields of competences and to specific national budgeting contexts. In this regard, ongoing work to develop national and international green budgeting benchmarks is welcomed, as it can improve the dissemination of green budgeting methodologies and principles among subnational governments. It is important to note, however, that the purpose of shared methodologies and assessment methods is not to compare subnational governments at national or international level.

Comments on practices

At national levels, the development of repositories of climate and environmental knowledge, data, and impact evaluation methods, in addition to green budgeting methodologies, has been several years in the making. For example, in 2019, the French government published its proposed national-level green budgeting methodology, thereby making information on how they classified their expenditure (i.e. the scientific assumptions on the climate and environmental impact of a given activity) publicly available for other governments, including subnational governments, to make use of (CGEDD/IGF, 2019[12]). Similarly, I4CE published a climate evaluation of the 2019 French State budget making publicly available the methodology they used, which subsequently lead them to collaborate with several French municipalities to develop a similar methodology that was adapted to the municipal budgetary context (I4CE, 2019[13]). In the same vein, the *Ecobilanci* methodology published by the Italian State can be also useful for other national and subnational governments, and contribute to building shared knowledge that supports the development of green budgeting (see case study of Venice in Chapter 6 and MEF (2022[14])) .

This kind of documentation, however, is not widespread at the subnational level, in part because the number of subnational green budgeting practices are limited compared to national-level practices. Nevertheless, some national bodies have taken up the issue with the aim to help subnational governments to adapt national methodologies to their contexts and own concerns. In France, the think tank I4CE has published detailed guides for municipal climate budgetary assessments (climate budget tagging) and is working to adapt the documentation to regional competences (I4CE, 2020[15]). These guides provide methodological advice for measuring the climate adaptation and mitigation impact of municipal budgets; for the time being, the guides do not specify how to create a relationship between these assessments and the monitoring of environmental and climate performance indicators by municipalities. However, the importance of future work outlining how to make this connection is underlined in their guides. Similarly, various tools to measure the biodiversity impact of subnational government policies have been developed in recent years by public and private institutions (Comité Français de l'UICN, 2014[16])). Notable among these tools is the Global Diversity Score (GDS) from CDC-Biodiversité, initially developed for companies and financial institutions but currently being extended to subnational governments (CDC Biodiversité, 2021[17]).

The development of green and sustainable taxonomies by several institutions worldwide also contributes to providing subnational governments with the scientific evidence necessary for carrying out a green budgeting exercise. Taxonomies provide information on how to classify economic activities according to their impact on the environment and climate change; this can be a useful tool for subnational governments to use in identifying the climate and environmental impact of budget items. Commonly used taxonomies, such as the EU Taxonomy of Sustainable Activities (EC, 2021[18]) or the Climate Bonds Initiative Taxonomy (Climate Bonds Initiative, 2020[19]) are not yet adapted to subnational government policy domains nor do they comprehensively capture transitional activities (activities that in the long-run are harmful to climate objectives but can be considered beneficial in the short-term in comparison to currently used technology or practices). Furthermore, using taxonomies often requires collecting very granular data. This poses a problem for many subnational governments as their existing IT systems are not designed for this or, alternatively, there is a time lag associated in collecting such granular data and it is not readily available at the time of the budget vote. These challenges need to be overcome for subnational governments to make full use of taxonomies within their green budgeting practices.

National laws and regulations related to climate change and the environment are also an importance source of scientific hypothesis on climate and environment and changes in regulatory expectations generate updates to the scientific assumptions underlying subnational green budgeting practices.

In France, several subnational governments (mainly cities, inter-municipal co-operation bodies, departments and regions) have started budget climate assessments, most often based on the methodology developed by I4CE (Box 4.5). These experiences show the value of sharing experiences and using “ready-to-use” methodological guides and their updates. However, the initial feedback shows that the development phase of such a project, even with the use of previously documented methods, remains quite time-consuming.

Recommendations for the international community

- Co-ordinate the development and alignment of green and transitional taxonomies for the public sector that cover all areas of subnational government intervention, including economic development.

Recommendations for national governments

- Engage in and facilitate vertical co-operation with subnational governments to develop national green and transitional taxonomies for the public sector, in particular for the subnational level, and align them with international standards.
- Widely disseminate to subnational governments the green budgeting methodologies, scientific hypotheses, and other assessment tools used in national-level practices.
- Encourage the establishment of national and international subnational green budgeting networks and communities of practice that convene experts and subnational government elected and administrative officials.
- Develop turnkey tools to help the smallest subnational governments (mainly municipalities) to implement green budgeting approaches.
- Insert as broadly as possible the existing methodologies and taxonomies in national labels and public subsidies or procurement eco-conditionality’s requirements.
- Encourage the financial sector to integrate green budgeting practices into their financing conditions for subnational governments, in particular to integrate eco-conditionalities clauses into their financing products.

Recommendations for subnational governments

- Organise frequent training on green budgeting methodologies, taxonomies, and methods for integrating climate and environmental considerations into project and expenditure assessments.
- Participate in national and international subnational green budgeting networks and communities of practice to share best practices, knowledge and tools, and enhance synergies among green budgeting practices in other jurisdictions.
- Capitalise on the cutting-edge climate and environmental research (methodologies, underlying scientific hypothesis, etc.) carried out at think tanks, academic institutions, and associations of subnational governments by soliciting their feedback and involvement in the green budgeting practice.
- Communicate transparently to the public and key stakeholders on the green budgeting methodology used and the underlying climate and environmental science it is based on.

Box 4.4. Andalusia's Green Budget Fund as a best practice for training administrative staff on green budgeting and on broader climate and environmental issues

In the framework of its climate strategy, the Autonomous Community of Andalusia (Spain) has developed a EUR 1 million Green Budget Fund set up to fund projects that integrate a green perspective into the region's budget. Proposed projects must focus on at least one of several green objectives including environmental protection, the fight against climate change, environmental sustainability, and/or mitigating the socio-economic impacts associated with climate change mitigation and adaptation. In addition, proposals are also required to address one of three budget-programming objectives which include promoting climate impact assessments; fostering the development and monitoring of budget objectives, actions, and indicators; and promoting capacity building and climate change awareness among public officials, particularly regarding the relationship between climate change and the budgetary process.

Source: Junta de Andalucia (2021[20]), *Sustainable Finance Framework*, https://www.juntadeandalucia.es/export/drupaljda/Andalucia_Sustainability_Framework_March_2021.pdf.

Box 4.5. Use of the European taxonomy in the climate assessment methodology of I4CE budgets

I4CE developed their climate budgetary assessment methodology. It classifies current and capital expenditure according to its impact on climate change mitigation and adaptation. The classification methodology is aligned with the European Taxonomy on Sustainable Activities (EC, 2021[18]). For municipal policy domains covered by the taxonomy (i.e. transport, waste management, etc.) the methodology's definition of what is harmful or favourable expenditure coincides with the technical criteria set out in the EU Taxonomy.

The use of the taxonomy is helpful to avoid long technical debates and instead focus on operationalising the methodology; however, in its current form the EU Taxonomy is not fully adapted to the needs of subnational governments as it covers only a few of their policy domains and does not sufficiently take into consideration transition activities.

Source: I4CE (2020[15]), *Évaluation climat des budgets des collectivités territoriales: guide méthodologique*, https://www.i4ce.org/download/evaluation-climat-des-budgets-des-collectivites-territoriales-guide-methodologique; EC (2021[18]), *EU Taxonomy for Sustainable Activities*, https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance/eu-taxonomy-sustainable-activities_en#regulation.

Guideline 4. Adopt a step-wise approach to implementing green budgeting in order to learn from previous steps and reinforce the alignment of the practice with local strategic priorities

Green budgeting practices should be implemented gradually, in order to take into consideration the priorities of the subnational government, to capitalise on foreign or national experiences, to put in place the necessary elements for the practice, to involve all stakeholders, and to adjust the government's broader budgetary policies to its climate and environmental objectives. This realistic approach must nevertheless be accompanied by an ambitious implementation programme, adapted to local issues, the financial means of the subnational government and its technical capacity.

Rationale

A step-by-step approach to implementing green budgeting can help trigger a "virtuous" momentum and better define and co-ordinate a subnational government's strategic priorities.

Green budgeting encompasses a variety of different tools and practices at national and subnational levels. The subnational green budgeting practices identified in the stocktake in Chapter 3, even when they fall within a methodological framework that is partially or wholly standardised at the national-level, are all unique exercises adapted to very local environmental and climate objectives and the human and financial resource capacity of the subnational government.

Analysis of these practices points to the complexity of implementing a green budgeting methodology and the time required to develop one that is comprehensive, consistent and integrated into a subnational government's overall climate and environmental strategy. The stocktake also showed that, even in the absence of such a comprehensive and stabilised methodology, the contributions of the green budgeting approach are almost immediate in terms of "change management". A gradual, step-by-step implementation of a green budgeting practice is therefore recommended to manage the complexity and to mitigate pushback that can arise when large-scale changes are implemented too fast or too abruptly.

Gradually widening the scope of green budgeting helps get the process started

Various scope issues must be addressed to launch a green budgeting approach

The first question relates to the choice and definition of the environmental axes to be covered as a priority. The European taxonomy's environmental objectives can be used to define these axes; they cover climate change mitigation, climate change adaptation, sustainable use and protection of water and marine resources, transition to a circular economy, pollution prevention and control, protection and restoration of

biodiversity and ecosystems. It also includes social criteria, which is not always the case in sustainable taxonomies under development in other countries or geographical regions (OECD, 2020[21]).

Climate mitigation and adaptation are very central in observed subnational green budgeting procedures, due to the broad responsibilities of subnational government in these areas and their participation in the national and international carbon-neutrality objectives (European Committee of the Regions, 2019[22]). Biodiversity is also a major concern, especially for regions that have frequently large competencies in that field (through for instance the management of sensitive natural areas) but also for municipalities that have major responsibilities and obligations in terms for instance of soil artificialisation. Other priorities (marine and aquatic resources, pollution…) can also be introduced from start in the green budgeting approach when the local context justifies it. Green budgeting thus intends to analyse the impact of public action on each specific environmental concern; it is however not conceived as a measure of a global or averaged environmental impact that would be reductive and would therefore not inform the political decision in a satisfying manner.

A second issue is to determine how the budget cycle will be covered by the green budgeting approach. The approach aims to cover the whole budgeting cycle from strategic planning and annual or multiannual fiscal framework (*ex ante*) to the budget execution and evaluation (*ex post*). It can thus include annual provisional budgets, multi-annual plans, closed accounts but the tools and methodologies to be developed to include climate and environmental concerns can ask for adaptation from one stage of the budget procedure to another, due to differences in the accounting granularity, the needed extra-financial information for characterisation of the expenditure or the voting methods that can differ between provisional budgets and closed accounts.

Various approaches can be retained concerning the perimeter to be covered, going from a screening of all expenditure and revenues, to that of a part only of the expenditure. If some green budgeting projects have limited the analysis to annual investment expenditure assessment, others are actively working on methodologies to cover the whole budgets perimeter; in this case, the methodological difficulties can be significant, all the more so as research is less developed on the current expenditure and revenue's analysis.

A last issue concerns the association of the stakeholders in the procedure. Regions frequently have a large part of transfer expenditure in their budgets while municipal utilities cover large fields of public services in sectors such as energy, water supply and sanitation, transports… Enlarge the green budgeting scope to this first circle of stakeholders could therefore facilitate the exercise by clarifying the end use of public funds.

Objectives of a gradual implementation

It is challenging and costly to cover simultaneously all perimeters. A gradual approach helps progressively increase awareness on environmental and real scientific issues and train staff to understand the ins and outs of a green budgeting methodology. When gradual, the approach can be integrated in the existing teams' roadmaps rather than calling on new staff or external consultants. It also gives time to transpose methodologies for instance from an environmental field to another or from provisional budgets to close accounts, whose framework, tools or voting procedures can differ.

A phased implementation is also useful for spreading out the costs over time and adapt procedures (and relationship with stakeholders) and information systems when data need is better known.

However, if green budgeting is a practice that should ramp up over several years, it is also crucial to have an ambitious schedule from the start to ensure that the measures taken in an environmental field will not interfere with other objectives that would come later.

Progressive implementation should not lead to losing sight of the need for multi-year planning that provides for the necessary means to achieve the objectives defined in the territorial diagnosis and planning documents of the subnational government.

Comments on practices

The observed green budgeting experiments sometimes relate to a climate assessment of the provisional budgets (this is the case of several municipalities and regions in France), and are conceived as a decision-making support tool, or focus on the closed accounts and help to evaluate the impact of the policies effectively implemented or to justify the action of the government in the climate or environmental field. They can also relate to a more specific objective such as the greenhouse gas emissions of the territory (carbon budgets).

In several cases, the experiences are enriched while remaining focused on their initial scope, but some governments sometimes present their approach as gradual, with the objective to progressively cover all environmental issues, financial documents and stakeholders and aiming to create links between budgets and environmental objectives of the subnational governments. As of now, no such global experiences have been identified at subnational levels.

Recommendations for national governments and the international community

- Define and disseminate the various green budgeting practices and tools in order to help a gradual appropriation by subnational government, thus encouraging step-by-step initiatives through the share of knowledge and engineering resources.

Recommendations for subnational governments

- Build on existing national and subnational green budgeting practices to develop a step-by-step approach to implementing green budgeting and communicate widely on the scope and the forthcoming steps.
- Plan an ambitious but realistic scope extension schedule that is adapted to local contexts, financial means, and technical capacity of the subnational government.

Cross green budgeting with the government's other priority budgeting approaches and green initiatives

Climate and environmental concerns come alongside to other types of priorities whose consideration has increased in the last decades, such as the fight against gender and social inequalities. Moreover, climate or environmental problematics and policies frequently have large impacts on those issues. For instance, the French think tank I4CE, through a social and climate evaluation of the 2021 French State budget, showed that 93 % of the budgetary measures having an impact on climate mitigation (either favourable or harmful) also had a social impact, mainly in terms and health and poverty (I4CE, 2022[23]).

The reflection on an articulation between green budgeting and other kinds of priority budgeting is therefore essential so that the budget process can fully inform elected officials on the consequences of their budgetary arbitrations, both in terms of expenditure and revenues.

Objectives of crossing green budgeting with other approaches

Social, gender and environmental issues are not independent. Recent studies tend to prove that the effect of damage to environment are unequally distributed and particularly affect poorest populations in general and women in particular, who are highly affected by climate change, deforestation, land degradation, desertification, growing water scarcity and inadequate sanitation (OECD, 2021[24]).

To make an informed budget decision, a large amount of information is therefore required relating to the various objectives targeted. This data need may require changes in the information systems but also in the contractual relations of the subnational government with its partners, by introducing economic, social, gender-related conditions in the government's procurement, subsidising and public service delegation policies. Analysing all these parameters simultaneously helps, in addition to improving the decision-making process, to rationalise the expectations of the local authority with regard to its partners.

Comments on practices

Several countries have implemented cross-priority budgeting, to include simultaneously, for instance, gender and climate considerations (the Mexican and Bangladeshi national government budgets (International Budget Partnership et al., 2021[25])) or social and environmental concerns (Ville de Clermont-Ferrand, 2021[26]) (see Box 4.6). In some other cases, both budgets are constructed by the subnational government, but their results are not necessarily co-considered in the budget decision-making process (Junta de Andalucia, 2021[20]).

Recommendations for national governments

- Provide a legal basis for the consideration of social, gender and environmental issues in budgetary processes through inclusion of the requirement in the legal or regulatory corpus applicable to the subnational governments.

Recommendations for subnational governments

- Define cross-priority budgeting expectations within the subnational government with the support of high-level elected officials and administrative officers, in particular to reconcile social and green objectives.
- Associate public, private, and nongovernmental stakeholders in developing the green budgeting methodology, defining the green budgeting implementation process, and gathering the necessary evidence to put in place efficient actions to reach green objectives.
- Review subnational government procurement policies as well as any environmental and social clauses within public contracts as part of the implementation of green budgeting.

Box 4.6. Clermont-Ferrand's approach of a socio-environmental rating of the multiannual investment programme

The municipality of Clermont-Ferrand (France) constructed its last multiannual investment programme (2021-30) using an evaluation tool including both environment and social impact measurement. The environmental rating tool uses a decision tree inspired by I4CE's methodological approach. The social tool estimates the project contribution to the diminution of social inequalities, inclusion and social mix, territorial balance, and user and citizen involvement. The results of these two ratings are consolidated and used during budget debates to help official to make informed decisions. They also give a visualisation of the distribution of the planned investment amounts over the mandate period, according to their political, environmental and social rating.

This approach helped mobilising elected officials on environmental and social issues in a cross-cutting manner and take better-informed and reasoned decisions.

Source: Ville de Clermont-Ferrand (2021[26]), "Evaluation socio-environnementale d'une programmation pluriannuelle d'investissement Retour d'expérience de la Ville de Clermont-Ferrand", https://www.adcf.org/files/AdCF-Direct/2021.10-Clermont-Ferrand_Evaluation-socio-environnementale-PPI.pdf (accessed on 15 April 2022).

Guideline 5. Integrate the green budgeting practice into existing public financial management procedures and tools to help ensure the practice endures

Budgetary procedures and tools need to be adapted to incorporate the green budgeting dimension. National governments can help by adapting the granularity of public accounting requirements or adjusting the format of budgets to allow for better identification and presentation of the climate and environmental impact of expenditures and revenues.

At the subnational level, internal procedures need to be adjusted to integrate green budgeting at all stages of the budgetary process with, if necessary, the implementation of new governance mechanisms to involve all stakeholders in the process. Internal and possibly external audits can help to ensure the robustness of the procedures and to reassure stakeholders of the quality of the work.

Rationale

At the national level, past experiences of priority budgeting such as gender budgeting have shown the effectiveness of a robust legal foundation to ensure the budgeting practices continue long-term (Gonguet et al., 2021[27]). According to the International Monetary Fund (IMF), the experiences of gender budgeting at national-level showed that the promotion of the practice is facilitated by including key issues, such as a clear mandate for the Ministry of Finance, the definition of key terms, general objectives and organisation, and the key requirements in a primary legislation. This legal recognition avoids having green budgeting be a one-off exercise and reduces the risk of backtracking arising from changes in the economic or political environment. These observations are also relevant to other types of priority budgeting such as gender budgeting and can apply at both the subnational and national levels.

Beyond this general recognition of the importance given to the green budgeting approach, it seems essential to adapt the operational procedures and tools to ensure the green budgeting long-term effective implementation and to carry out regular internal evaluation of the methods and results. It is a necessary condition to moving from incremental budgets – which remain the norm in many subnational governments – to priority budgets.

Budget procedures and tools must be adjusted to integrate the green budgeting approach

Formal political approval of the implementation of green budgeting, from a subnational government's deliberative assembly, makes it possible to validate the project and to define the main environmental and climate axes it will cover, the expectations for the project, and a general implementation strategy, which includes the project's governance structure.

Concrete implementation of the green budgeting process then requires a gradual ramp-up phase during which the methodology is defined and tested. This first phase can be carried out with reduced technical means and the team developing the project can be limited compared to all the parties usually participating in the budget process.

The next step is to integrate the approach within internal budgetary procedures, both at the stage of budget elaboration and execution. This entails training all the administrative personnel who will be involved in the budget process and that will have final operational responsibility for the implementation of the green budget. This also involves adapting internal IT systems to the methodology, to any changes in data collection and archiving that are required, and to any changes in internal and/or external reporting requirements.

External parties have an important role in environment issues and are the source of a large part of the information necessary for the evaluation of expenditure and projects; co-ordination mechanisms with all stakeholders are therefore necessary.

Objectives of adjusting procedures and tools

The in-depth adaptation of internal budgetary procedures and tools is key for ensuring the continuity of a green budgeting practice over time. Formalising and standardising budgetary processes in an occasion to question all methodological steps and to validate the answers provided through their inclusion in budgetary procedures and tools. The adjustment of these procedures further justifies the need to integrate green budgeting into the professional training of elected representatives and administrative staff.

Having suitable long-term tools ensure the preservation of the audit trail thanks to the archiving of the changes and their justifications as well as that of the results obtained. It is also a condition for limiting the costs of carrying out green budgeting exercises by automating some of the tasks.

Comments on green budgeting implementation practices

The organisational structure and tools implemented in the green budgeting practices identified in the stocktake (Chapter 3) vary greatly depending on the political dimension given to the project, its exact scope and methodology (carbon budget, climate budget, green budget, etc.), and the size of human and financial resource capacity of the subnational government. This last point is crucial; for some governments, financial constraints are such that the definition and implementation of green budgeting must be done with equal means (see Chapter 6, case study of Venice) or external funding must be found. Because there is such diversity in terms of scope, organisational structure, methodology, etc. among existing subnational green budgeting practices, it is not possible to provide a general quantification the cost of setting up such a practice.

The stocktake in Chapter 3 identified a diverse set of existing green budgeting practices. Some integrated green budgeting principles into budget circulars and arbitration methods (Municipality of Clermont-Ferrand, France), or changed the format of their budget to include a green budget statement (Municipality of Oslo, Norway). In some cases, specific staff were recruited to launch the process (Municipality of Växjö, Sweden), or external public or private consultants or agencies (CLEAR methodology, Municipality of Venice, Italy – see Chapter 6).

A main complexity also lies in linking the budget and the environmental and climate objectives, to measure the realisation of the actions and targets included for instance in the climate plans or the low carbon strategy of the government. In most experiences this part of the work remains to be defined and implemented either because the environmental and climate performance indicators are not defined precisely enough, or because the results are not regularly monitored (see Guideline 1).

Internal and external communication is essential to convince all stakeholders of the relevance of the green budgeting practice. It can include specific elements relating to green budgeting methodology (Occitanie Region, France) or a mere statement on green expenditure and revenues.

Some subnational governments or associations of governments (27e Region, France and the Municipality of Växjö, Sweden), are also working on the development of environmental accounting (Box 4.7). This work, complex from a methodological point of view, as it is not easy to express environment in monetary items, and difficult to implement operationally, remains relatively undeveloped for the time being even if it arouses the interest of researchers and some local decision-makers. But experiences remain positive in terms of capacity building and transversal co-operation within the government (Energy Cities, 2019[28]).

Recommendations for national governments

- Adapt the granularity of public accounting standards to facilitate the identification of expenditure and revenues favourable or unfavourable to the environment and climate.
- Adapt budget formats to make it easier to present green expenditure and revenue and thus enhance the transparency of their contribution to the climate and environmental objectives of the subnational government.
- Participate in the financing of practical training programmes for elected officials and administrative staff, adapted to the different levels of local authorities.

Recommendations for subnational governments

- Define and integrate the concept of green budgeting into budgetary procedures by specifying:
  - The green budgeting approach: definition and scope, inclusion of environmental and climate indicators in budget monitoring and evaluation processes.
  - The necessary internal organisation at the various stages of the budgetary process: responsibilities and duties, including adjustment of job descriptions if needed, and the horizontal co-ordination mechanisms between departments.
  - The methodology: repositories of scientific hypothesis and analysis methodologies, including their updating process, the requested training of administrative staffs in charge of budget preparation, implementation and control procedures in all the government's departments.
  - Guidance on the use of environmental and climate evaluation in the decision-making process.
  - How the impacts of green budgeting on the achievement of green objectives will be monitored.
- Adapt IT systems to be able to collect environmental and climate financial and extra-financial data (especially for activities subsidised by the government).
- Create new IT interfaces between policy planning and budgeting practices.
- Define governance mechanisms to be put in place for the inclusion of external stakeholders in the green budgeting process.

Box 4.7. CARE, a comprehensive accounting method in respect of ecology and ecosystems

In recent years, there has been an acceleration of initiatives in favour of reformed accounting and reporting methods, in order to take into account natural capital and the sustainability of economic models.

The CARE methodology (a comprehensive accounting method in respect of ecology and ecosystem) is one example of these works. It was first developed in the 1990s by Robert Gray, a professor at St. Andrews University (Scotland), and has been followed up on by two French searchers, Jacques Richard and Alexandre Rambaud, since the beginning of the 2010's. CARE accounting introduces the notion of triple capital, and posits that human and natural capital as resources to be preserved in addition to financial capital. Highlighting the damage suffered by the three types of capital makes it possible to take appropriate measures to preserve these resources or avoid the damage, and to predict the costs of preservation. CARE is therefore a historical cost accounting which is based on the same principles as those of traditional accounting. It reflects a kind of ecological debt that needs to be managed over time in order to ensure environmental performance in addition to financial or human performance.

The implementation of this model can be difficult. It requires considerable scientific expertise and the method for defining natural and human capital also has to be specified and standardised. Moreover, this methodology is not compatible with existing International Financial Reporting Standards (IFRS) (a set of accounting rules for the financial statements of public companies that are intended to make them consistent, transparent, and easily comparable around the world) which further complicates its adoption.

The IFRS Foundation is also considering the need to set up global sustainability standards and the creation of the International Sustainability Standard Board (ISSB) was announced during COP26. The ISSB will be responsible for setting new IFRS standards around sustainability to improve the consistency and comparability of sustainability reporting and reduce its complexity; but the approach will most likely focus on investors needs more than on those of other stakeholders.

Source: La 27ème Région (2020[29]), "Transformer nos outils de mesure pour piloter les transitions", https://www.la27eregion.fr/transformer-nos-outils-de-mesure-pour-piloter-les-transitions/.

Integrate green budgeting into internal and external audit procedures

Having external and internal audit mechanisms adapted to the decentralisation context is crucial to ensure budgetary and financial supervision and control. Financial audits are necessary to assess the quality of financial reporting and the reliability and accuracy of financial information and management.

When internal audit processes exist within a subnational government, these functions are frequently assumed by departments in charge of risk management or management control (ECIIA, 2022[30]). They can also be carried out by a dedicated commission or by auditors appointed by the deliberative assembly. In budgetary and accounting matters, audits often take the form of internal controls, limited to the checking of the proper application of accounting and financial procedures and the compliance of budgetary management with the applicable legal and regulatory provisions. Conversely, performance audits aimed at evaluating the effectiveness and efficiency of the processes are less developed due to lack of human and financial resources and of an organisation adapted to this type of control.

Countries usually also have external controls in addition to internal audits. It can be conducted by the national government (e.g. the Ministry of Finance), supreme audits offices that may or may not have a network of regional chambers (e.g. Cour des Comptes in France, Corte dei Conti in Italy, or the NIK in Poland, among others), and independent public or private commercial auditors.

With respect to green budgeting, an audit of the integration of the approach into the broader budgetary process has both internal and external benefits. Internally, it contributes to the solidity of the exercise by improving the green budgeting tools and the decision-making processes; externally, it enhances the credibility of the exercise by providing transparency into the implementation of the green budgeting

approach. This last point is particularly important in a context where accusations of green washing can easily be made for experiments whose scientific or technical quality is not proven.

Objectives

Auditing the green budgeting process gives insurance on the quality of the procedures, of the assumptions used to measure the environmental and climate impact of the budget, and on the ways that, and extent to which, the results were included in the decision-making process. It supports the continuous improvement of processes as well as their soundness.

An audit also provides quality insurance for a subnational government's external stakeholders, in particular the financial ones, who have requirements to green their activities by directing their financing towards environmentally and climate friendly projects.

The purpose of the audit is to examine the entirety of a green budgeting practice to ensure that the methodologies for evaluating revenues and expenditure are relevant and updated regularly to account for changes in the government's environmental planning as well as new climate and environmental scientific research. An audit must also ensure the compliance of the budget execution with the budget planning and check that the information gleaned from green budgeting and provided to elected officials for decision-making is reliable and easily usable.

An additional purpose of an external or internal audit is to guarantee that the green budgeting process fulfils its objective to better align a subnational government's budget, both expenditure and revenue sides, with their green objectives.

In the absence of an established internal or external auditing procedure, a high-level of transparency about the green budgeting methodology and the results achieved can also be a guarantee of the soundness of the entire practice. The development of green labels can also reinforce the credibility of the exercise (Box 4.8). However, a formalised internal or external auditing process is considered the best practice for the objective, outside view it brings.

Comments on practices

There are very few examples of internal or external audit practices related to subnational green budgeting. This can in part be explained by the overall limited development of internal auditing procedures within subnational governments in the OECD and EU, but also by the small number of green budgeting practices identified to date.

Recommendations for national governments

- Support the external and internal audit of budgeting procedures at subnational level and the inclusion of audited procedures in national green labels
- Encourage the development of a "green budgeting" evaluation expertise within external audit public bodies (e.g. regional courts of auditors), notably through awareness raising and training programmes. Encourages the emergence of organisations specialising in external environmental auditing.

Recommendations for subnational governments

- Include internal or external auditing as an integral component when implementing a green budgeting practice.
- Communicate widely, both internally and externally, on the procedure used to integrate a green budgeting methodology into the broader budgetary process.

Box 4.8. The inclusion of the climate budgetary assessment in the French label "Cit'ergie"

The Cit'ergie label (climate - air - energy label) is the French version of the European Energy Award (EEA®). It is one the two labels of the French programme "Territory Committed to the Ecological Transition" (Territoire Engagé Transition Écologique), together with the circular economy label. It validates the policies implemented by municipalities and inter-municipal co-operation bodies to support the green transition and energy efficiency. This label helps to improve the transversal mobilisation within the administration, to objectify the results obtained and to set up new climate and environmental actions with the help of the experts of the ADEME (the French public agency dedicated to assisting governments in the implementation of environment, energy and sustainable development policies). The label is also an asset for accessing European subsidies. In 2021, ADEME incorporated I4CE's climate budgetary assessment (a green budgeting methodology) into their 2021 Cit'ergie label criteria, thereby encouraging more municipalities to adopt green budgeting. The criteria specifies that the results of climate budgetary assessment should be presented to elected officials prior to budget discussions.

Source: ADEME (2021[31]), *Programme Territoire Engagé Transition Écologique*, https://territoireengagetransitionecologique.ademe.fr/referentiel/organisation-interne/.

Guideline 6. Include revenues within the scope of the green budgeting practice to ensure the entire budget aligns with green objectives

Although there is often little room for manoeuvre on the revenue side at subnational level, green budgeting should also cover the revenue side of subnational budgets. The first step is to measure the resources needed to cover climate and environment-related current and capital expenditure, and to ensure that all available funds, both traditional and innovative, are mobilised. Green budgeting also helps to ensure that the structure of revenues is in line with the subnational governments' green strategy, by analysing the overall environmental and climate impact of elected officials' funding choices.

Rationale

Subnational government revenues in OECD and EU countries, in particular current revenues, are generally determined within a restrictive framework, with little or no leeway on taxation, caps on utility pricing, and potentially limits on borrowing or other forms of external financing.

Moreover, subnational government revenues are the result of a trade-off between political decisions on how to finance public action – taxation or pricing, self-financing or borrowing – and financial constraints – it can be hard for subnational governments to not make sure of certain resources for a political reason (i.e. a climate or environmental commitment) considering broader government needs to finance operating expenses and investment.

In the OECD and EU countries, the revenue autonomy of subnational government differs widely from one country to another, depending on the level of fiscal decentralisation. In the recent years, the revenue autonomy of many subnational governments in the OECD and EU has been further restricted. This can be attributed to several factors including an increase in budgetary constraints, restrictions on borrowing, the impact of the COVID-19 crisis, the impact of equalisation mechanisms on some subnational budgets and the addition of new expenditure responsibilities to be financed, have also reduced subnational

governments room for manoeuvre across Europe and the OECD, in particular their possibility to act on revenues (OECD, 2021[32]; 2021[2]). What does revenue green budgeting then mean in this context?

Firstly, including revenues within the scope of a green budgeting practice aims to ensure that public revenues are sufficient to fund and finance the action needed to achieve a subnational government's medium and long-term green objectives and that all available financial sources are effectively mobilised.

Including revenues within green budgeting is also about ensuring that a government's revenue structure is aligned with their climate and environmental objectives. For example, there are different ways to green subnational tax systems, including eliminating the anti-green bias of existing subnational taxes (a classical example is analysing the property tax system to ensure it is not encouraging urban sprawl (OECD, 2018[33])); and using local taxes to foster green practices and developing subnational environmental taxes. (OECD, 2021[2])

Defining what revenue sources can be considered as green is therefore an important step. Current literature on the topic defines revenues two ways: by *base* or by *finality.*

With regards to the *base* approach, a green revenue source (generally a tax or a fee) is a behavioural tool whose basis is a physical unit having an unfavourable impact on environment. These kinds of revenues help to send a price-signal to consumers and divert them from consuming or purchasing products and carrying out activities that are harmful to the environment. These tools are interesting, although their usage faces concerns about price elasticity of demand, social acceptability, or legality (centred on maintaining equality between taxpayers). Moreover, these tool's efficiency is normally correlated with a decrease in their revenue over time, a situation that can be problematic for subnational governments who cannot necessarily compensate for these revenue losses with other revenue streams.

Currently there is no universal, generally accepted definition of environmental taxes; the OECD defines an environmental tax as "a tax whose tax base is a physical unit (or proxy of it) that has a proven, specific negative impact on the environment. Four subsets of environmental taxes are distinguished: energy taxes, transport taxes, pollution taxes and resource taxes" (OECD, 2005[34])". Broader definitions of environmental taxes, or more generally green revenues, can be chosen for green budgeting practices. Such definitions could include all kinds of taxes or assimilated products on activities or products having a negative impact on the environment or climate, or whose amount is calculated considering the environmental performance of the underlying product or service. Environmental taxation can thus include taxes that create incentives in favour of cleaner production or consumption habits (French Ministry of Finance, 2021[35]). Revenue earned from green revenue sources does not necessarily have to go towards funding green expenditure items.

Regarding the *finality* approach to defining environmental revenues, the revenue base is not necessarily linked to the environment, but the resource is restricted to the financing of environmental projects. It can cover a large range of revenues, from taxes and fees to subsidies, loans or bonds. There is no internationally standardised definition of what counts as a green bond, however, progress to this effect has been made in the last decade and new standards and labels have emerged.

At national government level, the incorporation of revenues into green budgeting generally focuses on the implementation and the efficiency of environmental taxes, with the definition of what is an environmental tax varying according to the country. At the subnational level, green budgeting practices that include revenues in their scope should cover the entire revenue side of the budget, to ensure an effective mobilisation and structuring of all available resources for the financing of the government's environmental and climate action. Subnational governments must indeed measure which resources will cover the needs of green investment but also the needs of functioning (operation). The latter are not financed by long-term resources as for investments (subsidies, loans, self-financing) but by operating resources (taxes, fees, etc.). This part of the needs is often poorly known and poorly appreciated, yet it is essential to have an overall view of the needs to cover green expenditure, including grants and subsidies (e.g. climate funds,

environmental earmarked funds, etc.), taxes, user charges, fees, land value capture instruments and other property income e.g. royalties (OECD, 2019[36]; 2022[37]; 2021[38]).

Ensure sufficient permanent funding and the mobilisation of all available green revenue sources for climate and environmental action

Even if some projects can be identified as purely environmentally or climate-related, environment and climate are above all cross-cutting competences and the overall funding and financing needs of subnational governments for these areas are frequently only partially identified, being intertwined with the standard operational services funding requirements. This can result in a poor estimation of the permanent financial resources available to cover a subnational government's current and investment expenditure needs related to the climate and environment.

The cross-cutting nature of climate and environmental issues thus implies that expenditure on environmental and climate action should not be financed exclusively through green revenues but also with the general budget of the government. When analysing revenues within the scope of a green budgeting practice, subnational governments must therefore ensure that both general and specific revenues are available. Using earmarked sources of revenues (climate/environmental funds and subsidies, green loans or bonds, etc.) in addition to general revenues, is a necessity and can be an opportunity to diversify the sources of financing, or even to access dedicated funding for small or the most fragile governments (that would not have access to such funds if there were not earmarked for environmental or climate action).

Revenue analysis gives a measure of the share of green revenues (environmental/climate subsidies, green loans and bonds, green taxes or fees) favourable to the environment and climate, that come in addition to general budget revenue sources. These green revenues can include current products, such as taxes or fees whose proceeds are intended to finance green expenditure, or investment products, such as grants, endowments, green loans or bonds, directed toward green projects or subject to eco-conditionality clauses (OECD, 2022[39]; 2022[37]).

Revenue analysis is also the occasion to consider the use of innovative financing mechanisms. Such mechanisms can initiate a step-by-step movement towards more virtuous behaviour (using for instance "intracting", an internal performance contracting developed in Germany)[3] or facilitate access to new types of financing (such as carbon finance, private-public partnerships, equity financing, impact bonds, loans, and more – see OECD (2021[40])). However, to date, in many European countries the extremely low borrowing cost for subnational governments discourages some of them from using innovative but slightly more complex financing mechanisms in favour of more traditional financing options. Moreover, in some cases, subnational governments have even eschewed earmarked funds dedicated to the environment or climate because they include too many covenants can rapidly become more expensive and complex than the traditional financing to which subnational governments are entitled.

In recent years, and in particular following the release of post-COVID-19 economic recovery plans which have a strong climate and environmental focus, the number of calls for proposals have increased considerably, often coming from a multitude of national or international funders. For subnational governments, these calls for proposals are an opportunity to finance pre-existing projects or to develop new ones. While this increase in the availability of funding is promising, it has aroused a certain amount of criticism particularly concerning the delays and complexity of the instruction, which often make them inaccessible to small governments; the focus on investment, despite the fact that operating expenditure can play an important role in the green transition; the multiplicity of ways to access the funding which makes it difficult to keep track of what is actually available; and the lack of funds dedicated to long-term projects.

Objectives of revenue analysis

Though remaining insufficient to cover the green investment needs of subnational governments, available funds for the financing of climate and environmental projects have drastically grown during the last decade, be it through public funding, such as national or international funds and subsidies, or financing such as green bonds or loans. Post-COVID-19 national and EU recovery plans have accentuated this trend due to their strong focus on a green recovery.

The objective of a revenue analysis is twofold: firstly, it ensures that a subnational government's budget revenues are sufficient to permanently meet their climate and environmental funding and financing needs, and second, it allows them to verify that all available environment and climate-dedicated funding sources have been mobilised. Beyond the additional revenue that they provide, green funds are also an opportunity to diversify funding sources that could be useful in the future.

Comments on practices

No existing subnational green budgeting practices have thus far included a comprehensive revenue analysis. However, that is not to say that subnational governments are not working to do so in the future. In France, I4CE specified in its municipal climate budgetary assessment methodological guide that "revenues could be included in the analysis, but they have not been processed for the moment considering the little leeway of subnational governments on their revenues" (I4CE, 2020[15]). In countries where subnational governments have more taxing powers and able to modify or create subnational taxes to align them with climate and environmental objectives, such inclusion may be very relevant, such as in Spain at the regional level for example.

The use of green financing instruments such as green loans and bonds is also rapidly growing at the subnational level. In the immediate term, the definition of these financing instruments is not standardised. This gives rise to variable reporting requirements from lenders and investors who view these products as an opportunity to green their portfolios and respond to increased scrutiny from regulators on the reality of the green commitments of major financial players, whether they be banks, insurers, investment funds or asset management companies.

Although financial sector actors show a continuous strengthening of their climate (and environment) commitments and policies, shortcomings in the implementation are still persistent and, according to regulators, this might hinder a real follow-up of the commitments. Green funding and financing may thus become the norm for the financial sector, and subnational governments, many of whom are pioneering these financial products, could be called upon to help advance this trend by imposing monitoring standards adapted to their realities, especially concerning their budget voting procedures and the follow-up of the operations.

Recommendations for national governments and the international community

- For national and international levels, ensure subnational governments have access to permanent sources of funding for their short-term and long-term climate and environment expenditure and investment needs.
- Facilitate subnational government access to financing and funding opportunities, as well as to financial engineering support and technical expertise. International organisations and national governments could, for example take, or support, initiatives that collect available financing and funding opportunities and sources of technical assistance into a centralised online portal (Box 4.9).

Recommendations for subnational governments

- Analyse and measure the need for permanent and recurrent funding and financing sources to cover climate and environment current and capital expenditure needs.
- Mobilise all sources of funding for climate and environmental projects and expenditure, including by pool engineering on local solutions and training personnel to be able to develop innovative funding and financing solutions.
- Participate in networks and communities of practice on funding and financing solutions for subnational climate action.

Box 4.9. Examples of platforms and networks

- Aides-territoires is a French public web site facilitating the search for aid from subnational governments and their local partners (associations, public establishments, companies, farmers). A search engine gives access to information on various financial and engineering aids and mechanisms to which subnational governments are entitled, making them more visible and accessible. Aids are posted by their own promoters and local governments can set up alerts to be informed of new mechanisms (ADEME, 2021[31]).
- In Portugal, a Climate Action Portal is set to be launched (before 2023), as determined by the Portuguese climate law (98/2021) (Laboratório Nacional de Energia e Geologia, 2022[41]). The portal will gather information about all financial support mechanisms and programmes for financing green and climate initiatives. It will disclose information about financing opportunities at all levels (European, national and local) for climate change mitigation and adaptation, available for private and public entities. It will also provide more general information about climate action in Portugal (e.g. emissions, goals, research and international agreements).
- The Project Preparation Resource Directory, an initiative of the Cities Climate Finance Leadership Alliance (CCFLA) and the Penn Institute for Urban Research, helps subnational governments and stakeholders identify project preparation facilities that can support them in developing green and resilient infrastructure projects (CCFLA, 2020[42]). Moreover, CCFLA itself is a multi-level and multi-stakeholder coalition that provides a platform to convene and exchange knowledge among all relevant actors dedicated to urban development, climate action, and/or financing. It has set up a Financial Toolbox Action Group (FTAG) whose objective is to collaboratively advance identification and deployment of financial instruments that can help to scale climate finance in cities. In doing so, this action group helps bridge the supply and demand for sub-national low carbon and resilient infrastructure (CCFLA, 2020[43]).
- The Compendium of Financial Instruments that Support Subnational Government Climate Action, developed by the OECD in collaboration with the European Commission, compiles qualitative information on 309 climate-related financial instruments (grants, loan programmes, loan guarantees, climate funds, contracts, etc.) available to subnational governments in all OECD and EU countries (OECD, 2022[37]). The Compendium is a tool for policy-makers, academics, and the general public to use to identify and compare climate change targeted financial instruments available to subnational governments across countries.

Source: Laboratório Nacional de Energia e Geologia (2022[41]), *Portugal Aprova a Lei Do Clima*, https://www.lneg.pt/portugal-aprova-a-lei-do-clima/; CCFLA (2020[42]), *Project Preparation Resource Directory*, https://citiesclimatefinance.org/project-preparation-resource-directory/; CCFLA (2020[43]), *Financial Toolbox Action Group (FTAG)*, https://citiesclimatefinance.org/action-groups/financial-toolbox/; ADEME (2021[31]), *Programme Territoire Engagé Transition Écologique*, https://territoireengagetransitionecologique.ademe.fr/referentiel/organisation-interne/; OECD (2022[37]), "Compendium of Financial Instruments that Support Subnational Government Climate Action", https://www.oecd.org/regional/compendiumsubnationalrevenue.htm.

Analyse the environmental and climate impact of revenue sources

An analysis of the environmental and climate impact of revenues is a complex but essential step for subnational governments to take as part of their green budgeting exercise. The first axis concerns the need to better align taxation systems with climate objectives, reaffirmed by the European Green Deal and the Paris Agreement. Though this point has already been underlined in the past, no significant progress has been observed during the last decade, notably in the EU (Eurostat, 2021[44]).

Regarding taxation, subnational governments often have limited room for manoeuvre, in terms of defining the tax base – including tax exemptions, incentives etc. - and/or setting the tax rates. However, there are more or less extensive possibilities for action, particularly for the municipal sector. For instance, development taxes, which are commonly developed at the municipal level, can be used to address urban sprawl when the municipality has the authority to set the tax rates and can differentiate by area. Waste taxes can also be used through the inclusion of incentive shares in the rate (or pricing) of waste collection.

Beyond environmental taxation, when analysing revenues as part of green budgeting, the way in which a public service is financed can also favour, or be detrimental to, the green transition. For example, current debate on totally or partially free public transit, that is to say financing public transit through taxation rather than user charges, is a good example of these kinds of impacts, in that it aims to favour, through gratuity, a mode of transport theoretically virtuous from an environmental point of view. However, these kinds of choices are often intertwined with concerns that may be social (is social justice preserved if public transport is free for all?), economic (an increase of public transport use could result in a drop in demand for individual cars and may have repercussions on employment) or financial (will the government have the means to finance additional infrastructure if there is a strong increase in demand due to free access?).

Given the generally standardised structure of public revenues within a country, national bodies could play a role in analysing the green impact of subnational government revenues but in the end the revenue structure of subnational governments, which is an eminently political subject, should remain their own prerogative, within their room for manoeuvre regarding their revenues.

Objectives of the revenue analysis

The analysis of the environmental and climate impact of subnational government revenues aims to identify the revenues and financing structures that have an impact, intentional or not, on taxpayer or consumer behaviour. Such an analysis increases awareness on how revenues can contribute to or hinder the achievement of the government's environmental and climate objectives.

Comments on practices

Many reflections and experiments regarding environmental taxation and the way public services are financed have been conducted at the subnational level in the OECD and EU. For example, according to the Rapid Transition Alliance, 100 cities in the world have already set up free public transport (Rapid Transition Alliance, 2021[45]).

Environmental tax audits are also being carried out, sometimes by associations of local governments, who see this as an opportunity to renegotiate with the national government for funding structures more suited to the constraints of their members.

Many governments are also working on innovative arrangements to meet their climate and environmental financing needs. But the smallest subnational governments frequently lack the technical and territorial engineering capacity necessary to take advantage of these innovative mechanisms.

Recommendations for national governments and the international community

- Promote and deepen research on the environmental and climate impact of revenue structures at the subnational government level and on the analysis of the environmental and climate impact of possible financing choices.
- At national level, enhance subnational governments' flexibility in terms of environmental taxation while also providing engineering and technical assistance for the implementation of such taxes.

Recommendations for subnational governments

Audit the contribution of all revenue source to the government's environmental and climate strategy and adjust the revenue structure to align with the government's green targets.

Box 4.10. Andalusia's Sustainable Finance Framework

To boost its climate strategy, the Autonomous Community of Andalusia (Spain) has developed a Sustainable Finance Framework to define the criteria to issue sustainable bonds (including green bonds) to finance social and environmental projects, and also to contribute to the development of green, social and sustainable bond and loan markets. The Sustainable Finance Framework follows existing green, social and sustainable bond labels (e.g. the Green Bond Principles, Social Bond Principals, Sustainability Bond Guidelines and the Loan Market Association's Green Loan Principles) and includes rules on the use of proceeds, on evaluating and selection projects, and on the management of proceeds and reporting. The Framework is also subject to external review.

The region has developed a green budget tagging methodology to be used to identify budget programmes to be funded by the proceeds of its sustainable bond issuances. Each budget programme was analysed in four ways:

1. First to determine whether the programme has a social, climate, or environmental impact.
2. Second, to determine whether the programme can be linked to the Green Bond Principles or the Social Bond Principles.
3. Third, to determine whether the programme meets the EU Taxonomy's technical screening criteria to be considered as significantly contributing to climate adaptation and mitigation.
4. And fourth, an analysis of the programme's budget indicators to ensure that they are adequate to meet post-issuance reporting requirements and to follow-up on programme execution.

The methodology allows the region to measure the amount of expenditure within each budget programme with a positive climate, environment or social impact and therefore the expenditure items that can be funded using sustainable bonds.

Source: Junta de Andalucia (2021[20]), *Sustainable Finance Framework*, https://www.juntadeandalucia.es/export/drupaljda/Andalucia_Sustainability_Framework_March_2021.pdf.

References

ADEME (2021), *Programme Territoire Engagé Transition Écologique*, https://territoireengagetransitionecologique.ademe.fr/referentiel/organisation-interne/. [31]

C40 (2022), *Oslo's Climate Budget*, https://www.c40knowledgehub.org/s/article/Oslo-s-Climate-Budget?language=en_US. [6]

Caisse des Dépôts (2021), "L'ingénierie territoriale, levier essentiel de développement des petites villes et des ruralités", Caisse des Dépôts Blog, https://www.caissedesdepots.fr/blog/article/lingenierie-territoriale-levier-essentiel-de-developpement. [47]

CCFLA (2020), *Financial Toolbox Action Group (FTAG)*, Cities Climate Finance Leadership Alliance, https://citiesclimatefinance.org/action-groups/financial-toolbox/. [43]

CCFLA (2020), *Project Preparation Resource Directory*, Cities Climate Finance Leadership Alliance, https://citiesclimatefinance.org/project-preparation-resource-directory/ (accessed on 9 May 2022). [42]

CDC Biodiversité (2021), *Global Biodiversity Score*, https://www.cdc-biodiversite.fr/le-global-biodiversity-score-pour-les-collectivites/. [17]

CGEDD/IGF (2019), *Green Budgeting : proposition de méthode pour une budgétisation environnementale*, Conseil général de l'environnement et du développement durable and Inspection générale des finances, France, https://www.igf.finances.gouv.fr/files/live/sites/igf/files/contributed/IGF%20internet/2.Rapports Publics/2019/2019-M-015-03_Green%20Budgeting.pdf. [12]

City of Oslo (2021), *Climate Budget 2021*, City of Oslo, https://www.klimaoslo.no/wp-content/uploads/sites/88/2021/02/Climate-Budget-2021-Oslo.pdf (accessed on 14 October 2021). [8]

Climate Bonds Initiative (2020), *Climate Bond Taxonomy*, https://www.climatebonds.net/files/files/CBI_Taxonomy_Tables_January_20.pdf. [19]

Comité Français de l'UICN (2014), *Indicateurs de biodiversité pour les collectivités territoriales*, https://uicn.fr/wp-content/uploads/2016/08/UICN_Indicateurs_biodiversite__collectivites.pdf. [16]

EC (2021), *EU Taxonomy for Sustainable Activities*, European Commission, https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance/eu-taxonomy-sustainable-activities_en#regulation. [18]

ECIIA (2022), *European Confederation of Institutes of Internal Auditing*, http://www.eciia.eu. [30]

Energy Cities (2019), *Climate-mainstreaming Municipal Budgets*, Energy Cities, https://energy-cities.eu/publication/climate-mainstreaming-municipal-budgets/ (accessed on 29 January 2021). [28]

Energy Cities (2013), *Intracting – Internal Performance Contracting*, https://energy-cities.eu/wp-content/uploads/2018/11/dossier_intracting_en.pdf. [46]

European Committee of the Regions (2019), *The role of local and regional authorities in National Energy and Climate Plans taking into account the recommendations by the European Commission (Commission for the Environment, Climate change and Energy)*. [22]

Eurostat (2021), *Environmental Indicator Catalogue*, https://ec.europa.eu/eurostat/documents/1798247/6812352/Environmental+indicator+catalogue_pdf/. [3]

Eurostat (2021), *Environmental Tax Statistics - Detailed Analysis*, Eurostat Statistics Explained, https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Environmental_tax_statistics_-_detailed_analysis#General_overview. [44]

French Ministry of Finance (2021), *Rapport sur l'impact environnemental du budget de l'État, 2020*, https://www.budget.gouv.fr/files/uploads/extract/2021/PLF_2021/rapport_IEE.PDF. [35]

Gonguet, F. et al. (2021), *Climate-Sensitive Management of Public Finances - "Green PFM"*, International Monetary Fund. [27]

I4CE (2022), *Faire du budget vert un budget vert ET social ?*, https://www.i4ce.org/faire-budget-vert-social-climat/. [23]

I4CE (2020), *Évaluation climat des budgets des collectivités territoriales: guide méthodologique*, Institute for Climate Economics, Paris, https://www.i4ce.org/download/evaluation-climat-des-budgets-des-collectivites-territoriales-guide-methodologique. [15]

I4CE (2019), *Une évaluation climat à 360° du budget de l'État*, https://www.i4ce.org/wp-core/wp-content/uploads/2019/09/I4CE-Etude-EvalClimat360%C2%B0BudgetEtat.pdf. [13]

IHEST (2021), *Vers une budgétisation verte en Bretagne : piloter la transition climatique et écologique*, Institut des hautes études pour la science, https://www.ihest.fr/wp-content/uploads/2021/06/IHEST-UT2020-synthese.pdf. [11]

INSEE (2022), *Indicateurs territoriaux de développement durable*, Institut national de la statistique et des études économiques, https://www.insee.fr/fr/statistiques/4505239. [4]

International Budget Partnership et al. (2021), *Tackling Gender Inequality and Climate Change through the Budget*, https://internationalbudget.org/wp-content/uploads/gender-climate-budgeting-synthesis-april-2021.pdf. [25]

ISTAT (2020), *Le Misure Statistiche SDGS: Le Regioni*, Istituto nazionale di statistica, https://www.istat.it/it/benessere-e-sostenibilit%C3%A0/obiettivi-di-sviluppo-sostenibile/gli-indicatori-regionali. [5]

Junta de Andalucia (2021), *Sustainable Finance Framework*, https://www.juntadeandalucia.es/export/drupaljda/Andalucia_Sustainability_Framework_March_2021.pdf. [20]

La 27ème Région (2020), "Transformer nos outils de mesure pour piloter les transitions", https://www.la27eregion.fr/transformer-nos-outils-de-mesure-pour-piloter-les-transitions/. [29]

Laboratório Nacional de Energia e Geologia (2022), *Portugal Aprova a Lei Do Clima*, https://www.lneg.pt/portugal-aprova-a-lei-do-clima/ (accessed on 6 June 2022). [41]

MEF (2022), *Ecobilancio 2022*, Ministero dell'Economia e delle Finanze, https://www.rgs.mef.gov.it/VERSIONE-I/attivita_istituzionali/formazione_e_gestione_del_bilancio/bilancio_di_previsione/ecobilancio/. [14]

Nordregio (2020), *Nordregio Policy Brief #1: Agenda 2030 and SDGs at the Local Level - A Brief Start-up Guide*, http://norden.diva-portal.org/smash/get/diva2:1392101/FULLTEXT01.pdf (accessed on 4 May 2022). [9]

OECD (2022), “Compendium of Financial Instruments that Support Subnational Government Climate Action”, OECD, Paris, https://www.oecd.org/regional/compendiumsubnationalrevenue.htm. [37]

OECD (2022), “Subnational Government Climate Finance Tracking”, OECD, Paris. [39]

OECD (2021), *Gender and the Environment: Building Evidence and Policies to Achieve the SDGs*, OECD Publishing, Paris, https://doi.org/10.1787/3d32ca39-en. [24]

OECD (2021), *Green Budgeting in OECD Countries*, OECD Publishing, Paris, https://doi.org/10.1787/acf5d047-en. [10]

OECD (2021), *OECD Regional Outlook 2021: Addressing COVID-19 and Moving to Net Zero Greenhouse Gas Emissions*, OECD Publishing, Paris, https://doi.org/10.1787/17017efe-en. [2]

OECD (2021), “Subnational governance and investment in infrastructure”, in *OECD Implementation Handbook for Quality Infrastructure Investment: Supporting a Sustainable Recovery from the COVID-19 Crisis*, https://www.oecd.org/finance/OECD-Implementation-Handbook-for-Quality-Infrastructure-Investment.htm. [38]

OECD (2021), “The territorial impact of COVID-19: Managing the crisis and recovery across levels of government”*, OECD Policy Responses to Coronavirus (COVID-19)*, OECD, Paris, https://www.oecd.org/coronavirus/policy-responses/the-territorial-impact-of-covid-19-managing-the-crisis-and-recovery-across-levels-of-government-a2c6abaf/. [32]

OECD (2021), *Unlocking infrastructure investment: Innovative funding and financing in regions and cities*, OECD Publishing, Paris, https://doi.org/10.1787/9152902b-en. [40]

OECD (2020), *Developing Sustainable Finance Definitions and Taxonomies*, Green Finance and Investment, OECD Publishing, Paris, https://doi.org/10.1787/134a2dbe-en. [21]

OECD (2019), “Financing climate objectives in cities and regions to deliver sustainable and inclusive growth”*, OECD Environment Policy Papers*, No. 17, OECD Publishing, Paris, https://doi.org/10.1787/ee3ce00b-en. [36]

OECD (2018), *Rethinking Urban Sprawl: Moving Towards Sustainable Cities*, OECD Publishing, Paris, https://dx.doi.org/10.1787/9789264189881-en. [33]

OECD (2005), *Environmental Taxes*, Glossary of Statistical Terms, OECD, Paris, https://stats.oecd.org/glossary/detail.asp?ID=6437. [34]

OECD (n.d.), *OECD Environmental Data and Indicators*, OECD, Paris, https://www.oecd.org/environment/data-and-indicators.htm. [1]

Rapid Transition Alliance (2021), “Free public transport: The new global initiative clearing the air, roads and helping keep climate targets on track”, https://www.rapidtransition.org/stories/free-public-transport-the-new-global-initiative-clearing-the-air-roads-and-helping-keep-climate-targets-on-track/. [45]

Realdania (2021), *DK2020*, Realdania, https://realdania.dk/projekter/dk2020 (accessed on 2 May 2022). [7]

Ville de Clermont-Ferrand (2021), “Evaluation socio-environnementale d’une programmation pluriannuelle d’investissement Retour d’expérience de la Ville de Clermont-Ferrand”, https://www.adcf.org/files/AdCF-Direct/2021.10-Clermont-Ferrand_Evaluation-socio-environnementale-PPI.pdf (accessed on 15 April 2022). [26]

Notes

[1] See https://www.oecd.org/regional/snggreenbudgeting.htm.

[2] Territorial engineering is the set of professional expertise and know-how that public authorities and local actors need to carry out territorial development or sustainable planning, by means of tools and skills aimed at the design, implementation and evaluation of their territorial projects (Caisse des Dépôts, 2021[47]).

[3] “The energy department of a local government finances cost-efficient energy and water saving measures. The savings made by the technical department or municipally owned company on their energy bill are used to repay the energy department until full recovery of the investment capital. The technical department or municipally owned company then can freely dispose of the savings. The energy department therefore provides zero-interest loans to finance specific measures or packages of measures with no increase charged for risks, rewards or ROI” (Energy Cities, 2013[46]).

5 Brittany case study

The French region of Brittany began working on developing its own green budgeting practice at the end of 2020. These efforts led to the development of a climate budget tagging methodology that was piloted on the region's 2020 closed accounts and is now being consolidated in order to be applied to the 2023 draft budget. The exercise has highlighted the operational, methodological, political, and organisational challenges for implementing green budgeting at the regional level as well as key elements necessary to achieve success.

Introduction

Through their budget and investment decisions, subnational governments have a large impact on the environment, especially in terms of greenhouse gas emissions. This is due to their investments in local assets (roads, buildings, public lighting, vehicle fleets) as well as to their role in regulating sectors like urban planning and housing, land development, and transportation. The necessity to commit to preserving the environment and to reducing greenhouse gas emissions is widely recognised, and strategic documents produced by these governments provide additional evidence for it. In this context, green budgeting enables local authorities to commit to sustainability, providing at the same time an interesting tool to quantify their contribution to environmental issues.

This requires identifying the expenditure as well as the sources of revenue that have a favourable or harmful impact on the environment and climate. In doing so, subnational governments can ensure that their budgetary decisions are aligned with their environmental and climate objectives.

This new approach to subnational budgeting can also be an opportunity for rethinking regional value chains. By gaining a better understanding of different local actors' business models - with all the externalities they produce, either positive or negative – subnational governments can achieve the ultimate goal of creating new business ecosystems aligned with national and local green objectives.

Green budgeting on its own does not solve environmental and climate problems but it can provide an opportunity to innovate, to involve regional and local stakeholders from the different economic and social sectors, and to mobilise them around clearly defined and commonly agreed upon green objectives. Regional governments, in countries where this tier of government exists, can play a particularly critical role in bringing together stakeholders as part of green budgeting as they often have a key responsibility in developing regional strategic plans and are positioned as leaders in many sectors.

For the green budgeting approach to be successful, it must be well positioned within the framework of an overall regional sustainable development strategy, and both its contribution to achieving climate and environment objectives and its effects in the short, medium and long term must be quantified. Otherwise, green budgeting could become a mere object of financial communication – "green washing" – or a senseless regulatory constraint.

Inspired by the success of a few experiments conducted in France and other European countries, in 2020 the region of Brittany decided to incorporate green budgeting into its environment and sustainable development policies.

[1] Because of the magnitude of the political stakes entailed by such an exercise, this project required strong political support and a capacity for mobilising personnel from various levels of the regional administration. The region was successful in taking this first step.

At this point, it was necessary to define certain deployment conditions: if and when additional developments would be considered, what connections between regional actions and tools would be put in place to support sustainable development and, above all, what strategy for involving partners in this endeavour would ensure meaningful action. The region would also have to transition the green budgeting project team from "project mode" to a more long-term organisational structure, both in terms of human resources and in terms of tools. All these endeavours must be carried out with consistent, but gradually improving methodologies so as to accommodate increased stakeholder involvement and advances in green technologies as well as in climate and environmental science. Brittany's early work on green budgeting revealed that implementation of a green budget could not be achieved quickly throughout the administration; it requires appropriate technical, financial and human resources, which can only be defined once methodological work progresses.

Extensive communication and thorough training of all participants (both internal and external) are key requirements for such a complex project, because, after a gradual roll-out, it requires the total mobilisation of the region and its partners and an in-depth understanding of the local environmental and climate issues and objectives.

Large French subnational governments display growing interest in green budgeting

The fragmentation of the French subnational governments

France has three levels of subnational government. The subnational government sector is made up of 13 regions and 92 departments in metropolitan France, plus the European Community of Alsace (which has grouped together the two Alsatian departments), three communities with special status in metropolitan France (Paris, Lyon and Corsica), and three communities with special status in the overseas departments (Martinique, Guyana and Mayotte). At the regional level, there are 18 regions, of which 13 are in metropolitan France and five are overseas. The intermediate level consists of 101 departments (*départements*), five of which are overseas. The lowest level of government is municipalities[2] (communes), of which there are 34 965 (including 129 overseas). Additionally, there are 1,253 inter-municipal public co-operation bodies with taxation power.

The subnational government sector's annual spending (excluding debt reimbursement) amounted to nearly EUR 230 billion in 2020; however, it's worth noting that the expenses of 97% of municipalities with less than 10 000 inhabitants represented only EUR 25 billion, with average annual expenditure of about EUR 1 million for these local authorities (Direction Générale des Collectivités Territoriales, 2021[1]). The average annual expenditure of municipalities with less than 2 000 inhabitants, (85% of all municipalities) was around EUR 500 000.

In addition to local governments, various establishments (such as municipal centres for social action, school districts, local fire and rescue services, municipal associations without taxation powers) also provide public services, financed largely, and in some cases even completely, by contributions from subnational governments.

Subnational governments also maintain close relations with other actors that vary in their dependence on public funding. This includes fully or partially public companies, private companies (to which governments outsource certain services), or even non-profit organisations, which depend financially on public subsidies. Subnational government financial statements directly or indirectly show the links with these actors.

Subnational green budgets are rapidly increasing in France

In France, the first green budgeting experiments were conducted mainly in cities and large municipal associations. Several departments and regions have also started. These governments have been supported by the Institute for Climate Economics (I4CE) think tank to develop their green budgeting methodologies (Box 5.1).

Green budgeting clearly piqued the interest of large subnational governments in France, particularly regions which play a major role in terms of sustainable development. While the national government was a green budgeting pioneer in France, several municipalities and municipal associations quickly followed. Since 2020, the regions of Occitanie, Grand-Est and Brittany have all launched a green budgeting practice. They have all adopted a pragmatic approach to overcoming the methodological and technical challenges the exercise entails, aiming to get results quickly, even if they remain imperfect and will need refining over time.

Box 5.1. Climate budget methodology guides developed by the I4CE for municipalities and municipal associations

The Institute for Climate Economics (I4CE) is a think tank founded by the *Caisse des dépôts et consignations* (CDC) and the French Development Agency (*Agence Française de développement* – AFD). Specialising in economics and finance, I4CE seeks to promote action against climate change among national and local authorities, financial institutions, and companies.

In 2020, I4CE co-constructed a methodology to evaluate the climate impact of municipal budgets. This methodology was built with assistance from five "pilot" municipalities, (the cities of Paris and Lille, the Métropoles of Lille and Lyon and the Eurométropole of Strasbourg), associations of elected officials (Covenant of Mayors in France and France Urbaine), ADEME (a French public agency that provides financial assistance and advice for municipalities, companies and private individuals in the field of climate change and the environment) and EIT Climate KIC (a European a Knowledge and Innovation Community (KIC), working to accelerate the transition to a zero-carbon economy).

I4CE has published a series of methodological guides about green budgeting and also organises information sessions and workshops to provide interested municipalities with methodological and implementation support to integrate green budgeting into their budgetary processes.

I4CE's methodology is one of the criteria to obtain the Cit'ergie label, which rewards local authorities who implement an ambitious climate-air-energy policy. Registration with Cit'ergie, which leads to the labelling, enables committed local authorities to receive financial aid from ADEME in the form of personnel and methodological tools (see also Box 4.8 in Chapter 4).

Source: I4CE (2020[2]), *Évaluation climat des budgets des collectivités territoriales: guide méthodologique*, https://www.i4ce.org/download/evaluation-climat-des-budgets-des-collectivites-territoriales-guide-methodologique; EIT (2022[3]), *EIT Climate-KIC: Innovation for Climate Action*, https://eit.europa.eu/our-communities/eit-climate-kic.

Brittany's green budgeting project is managed at the highest political and administrative levels and is integrated into the regional sustainable development strategy

The green budget is embedded in Breizh COP, the regional project for the climate and the environment

Launched in 2017 and modelled on the United Nations (UN) Conference of Parties, Brittany's Breizh COP initiative is a project designed to build a "balanced, savings-oriented, and inclusive Brittany by 2040" and to bring together the main socio-economic stakeholders in the region (Région Bretagne, 2018[4]). Breizh COP defined a Regional Scheme for Spatial Planning, Sustainable Development and Territorial Equality (*Schéma Régional d'Aménagement, de Développement Durable et d'Égalité des Territoires* – SRADDET) consisting of 38 objectives and six transversal commitments: healthy eating standards for everyone, a strategy for energy and climate efficiency, carbon-free sustainable mobility, a responsible digital agenda, the conservation and valorisation of biodiversity and resources, and cohesion between territories (Région Bretagne, 2019[5]; Région Bretagne, 2018[6]). A "Transition Action Plan" is being developed by the region to implement the 38 objectives. The plan details the financial and human resource requirements needed to achieve the objectives and includes separate action plans for each of the six strategic orientations. In terms of the energy transition, Brittany also aims to halve its greenhouse gas emissions by 2040 (compared

to 2012), to reduce energy consumption by 35%, and to produce 6 times more renewable energy, an objective which is also outlined in its SRADDET.

Green budgeting will help the region to identify expenditure items that are favourable or harmful to the climate and the environment as well as those which contribute to the region's climate adaptation needs, thus contributing to an increase in the number of green projects funded via the regional budget and facilitating the reduction of regional greenhouse gas emissions. In this way, green budgeting contributes to achieving the Breizh COP objectives for sustainable development, as well as the objectives set out in France's National Low-Carbon Strategy (SNBC) and the Paris Agreement.

Brittany began its green budgeting exercise at the beginning of 2021, using data from its 2020 closed administrative accounts, aiming to define and validate a framework to make green budgeting a lasting practice. This framework will specify the objectives and clarify the conditions necessary to incorporate green budgeting into regular budgetary procedures, into the reporting system, and into the decision and validation processes for regional projects.

The region is not looking to have a "100% green" budget, as they recognise that some expenses are by nature neutral, harmful or have no realistic short-term green alternative, but remain nevertheless indispensable for various reasons (e.g. ferry services for islands). By measuring the share of the regional budget that contributes to energy and environmental transitions, the region intends instead to improve the assessment of the environmental and climate impact of regional policies and to facilitate the achievement of the SRADDET objectives by creating a direct link between these policies and the regional budget and by providing an additional decision-making tool. Moreover, green budgeting is an effective tool to communicate with citizens and local partners, or with public or private financial institutions providing sustainable development funds, such as the European Investment Bank (EIB), the French "*Banque des Territoires*" (*Caisse des dépôts et consignations*), and green bonds issuers, among others.

In the interest of getting the project started, it was decided that the initial phase would only focus on analysing the climate adaptation and mitigation impact of the region's 2020 closed accounts. In future iterations of the project, additional environmental impacts (e.g. biodiversity, air pollution, etc.) will be analysed.

The project's initial objective was to rapidly define a robust and stable methodology (in about six months) and then continue to improve it and expand its scope during the following years. In other words, the objective of this pilot green budget was to be "pertinent but not necessarily perfect" (Région Bretagne, 2021[7]). But the work carried out in 2021 highlighted several challenges and underscored the importance of working closely with other French regions, something which Brittany did as part of a working group co-ordinated by Régions de France and I4CE and consisting of the regions of Brittany, Grand-Est and Occitanie. Prior to the working group, Grand-Est and Occitanie had also started work on their own green budgeting practices (Box 5.2). This entailed a delay of approximately three to six months. Brittany's green budgeting methodology is still expected to undergo some changes, although the administration recognises the need to keep some stability in the methodology to allow for the comparison of results over time and to facilitate clear communication on the project. Despite high aspirations (i.e. to complete deployment on all environmental and climate axes before the end of the mandate), the approach needs to remain realistic and to involve the whole regional administration without overburdening departments.

Regional elected officials insisted from the beginning that it was necessary to involve both the political and the administrative sides in developing the green budgeting exercise and overcoming the challenges it posed. The regional executive did not want the exercise to become greenwashing. As such, they insisted on integrating the approach into regional decision-making processes and using it as a "transformative process" (Région Bretagne, 2021[7]) and a monitoring tool for the transition plan, connecting all concerned elected officials, especially those in charge of the environment.

Box 5.2. Two French regional green budgeting experiences: Occitanie and Grand Est

The Occitanie Region

The project was launched in 2020, following the conclusions of a "mission to get information and evaluate climate change in the Occitanie/Pyrenees-Mediterranean Region", which was conducted by the regional vice-president responsible for the ecological and energy transition and the delegate regional counsellor for higher education and research. Occitanie aims to produce a green budget, align its budget with its transformation and development plan, the "Green New Deal" and its strategy to be an "Energy Positive Region" *(Région à Energie Positive* or REPOS).

The Grand Est Region

Towards the end of 2020, the Grand-Est Region indicated their willingness to build a green provisional budget, based on their SRADDET and involving elected officials and regional administrative personnel. The climate impact of the 2022 provisional budget was evaluated using the I4CE methodology and the results were published in January 2022.

Source: La Région Occitanie (2020[8]), *Rapport de présentation du Budget Primitif 2021*, La Région Occitanie; Nature 2050 (2021[9]), "La Région Grand Est choisit CDC Biodiversité et la Banque Des Territoires pour l'accompagner dans ses demarches en faveur de la biodiversité", https://www.nature2050.com/evenements/la-region-grand-est-choisit-cdc-biodiversite-et-la-banque-des-territoires-pour-laccompagner-dans-ses-demarches-en-faveur-de-la-biodiversite/ (accessed on 23 April 2021).

The approach is promoted at very high political and administrative levels

The green budget was launched by the regional president at the end of 2020

In December 2020, the green budget was launched at the request of the regional president, with additional political backing by the region's vice-president in charge of finances, human resources, general resources and European and International affairs.

Even though French regional elections were set to take place in 2021, the project was initiated at the end of 2020. To formalise it, a "regional university" was organised in March 2021, with assistance from the Banque des Territoires and the French Institute of Advanced Studies for Science and Technology (*Institut des Hautes Etudes pour la Science et la Technologie* - IHEST), the participation of local authorities and Brittany's partners, and with the participation of the OECD (IHEST, 2021[10]). This conference led to an inventory of green budgeting practices and helped define the conditions for Brittany to appropriate similar experiments carried out previously, both abroad and in France (particularly by the metropole of Lille, the city of Paris or the region of Occitanie). It also made it possible to start envisaging the methodology and planning for the project to be launched as quickly as possible.

After the conference, the different project-monitoring bodies were established by defining a project-based organisation that was to last approximately nine months. The first phase of the project took place from April to July 2021, and developed the reference framework for the green budget (scope, general methodology) and to carry out an initial analysis of the region's 2020 closed accounts.

The second phase of the project lasted from July to December 2021. In this phase, the region finalised the exercise and gathered feedback on the methodology in order to apply it to the 2022 provisional budget and to define an operational process which would include integrating the results in the budgetary decision-making process, involving external partners (for example, by setting obligations to provide additional information to subsidised entities or to include green conditionalities in third-party contracts), and communicating on the project.

In this second phase, the region is contemplating the deployment of the methodology to its investment programme in order to define a “green” multiannual investment plan (*Plan Pluriannuel d’Investissement* or PPI), and develop for each regional department its own impact indicators. The administration could thus combine the green budget with the Transition Action Plan for Brittany. This phase should also lead to the definition of decision-making tools.

Managed by a Steering Committee, the green budgeting project is carried out by the regional Department of Finance and Evaluation, the regional Department for Climate, Environment, Water and Biodiversity, four other pilot regional government departments, a Technical Committee and a team of twelve people, six of whom are fully assigned to the project for an initial three-month period.

The Steering Committee consisted of elected officials, including the regional councillor who is the general rapporteur for the budget and several councillors and vice-presidents of key sectors as well as of administrative staff, including managing directors. The project and its progress are periodically presented to and validated by the Executive Committee (Figure 5.1 and Figure 5.2).

The top regional administration is involved at a high level in the green budget conception

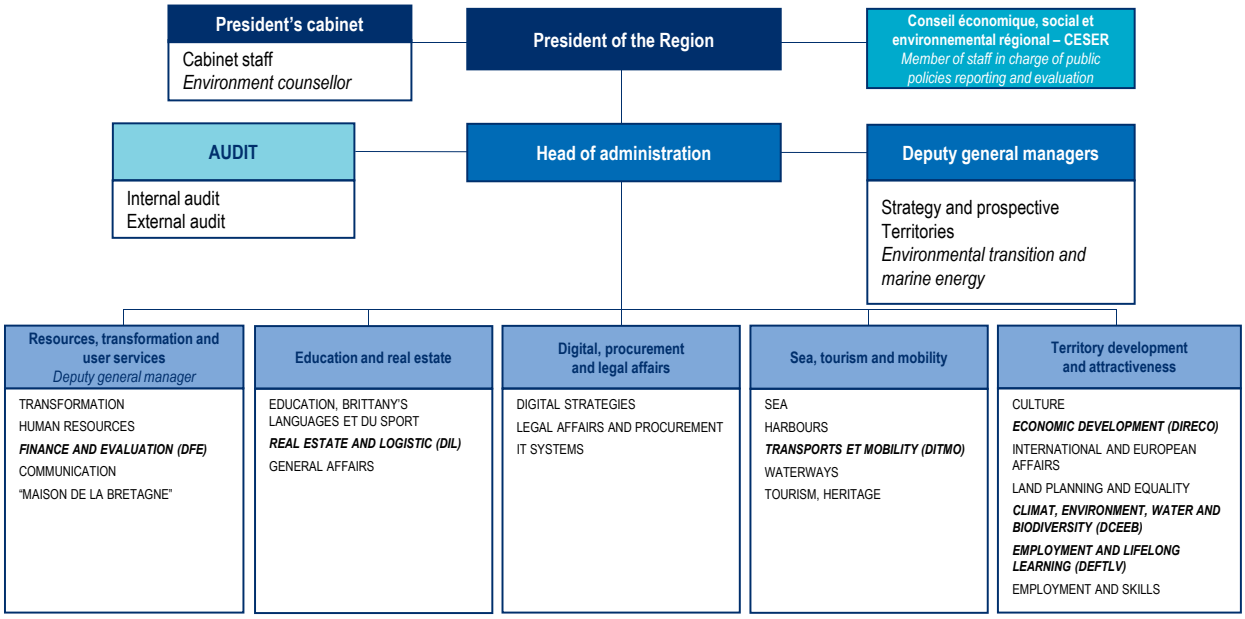
The project is driven administratively by the region’s executive management, especially by the Deputy Director General in charge of resources, transformation and user services and the Delegated General Manager in charge of environmental transitions and marine energy The administration defined the framework for the project and gave it impetus by promoting and prioritising the initiatives with the participating departments.

The Department of Finance and Evaluation (DFE) is responsible for the project’s operational management, playing a major role in resource allocation and data consolidation. The Department for Climate, Environment, Water and Biodiversity (DCEEB) provides support and expertise, especially for defining benchmarks. In addition, four pilot regional government departments were also involved in this first green budgeting exercise: the Department for Employment and Lifelong Learning (DEFTLV), the Department of Economic Development (DIRECO), the Department of Transport and Mobility (DITMO) and the Department of Real Estate and Logistics (DIL). These departments were selected according to their share in the regional annual expenditure and the strategic nature of their activities when it comes to green budgeting (especially for DITMO and DIRECO).

To support this approach, each department (DFE, DCEEB and the four pilot departments) has appointed one permanent regional staff referent (two project leaders from DFE and DCEEB and four project managers from the pilot departments) and one trainee referent to carry out the green budget analysis in their area. The referents and trainees can contact the programme managers within the regional government (who have been made aware of the green budgeting exercise) for assistance and particularly to help with collecting extra-accounting information they need to complete their work. For the first stage of the project, the joint team from the finance and environment departments is responsible for analysing the budget lines of the regional departments that do not take part in the experiment.

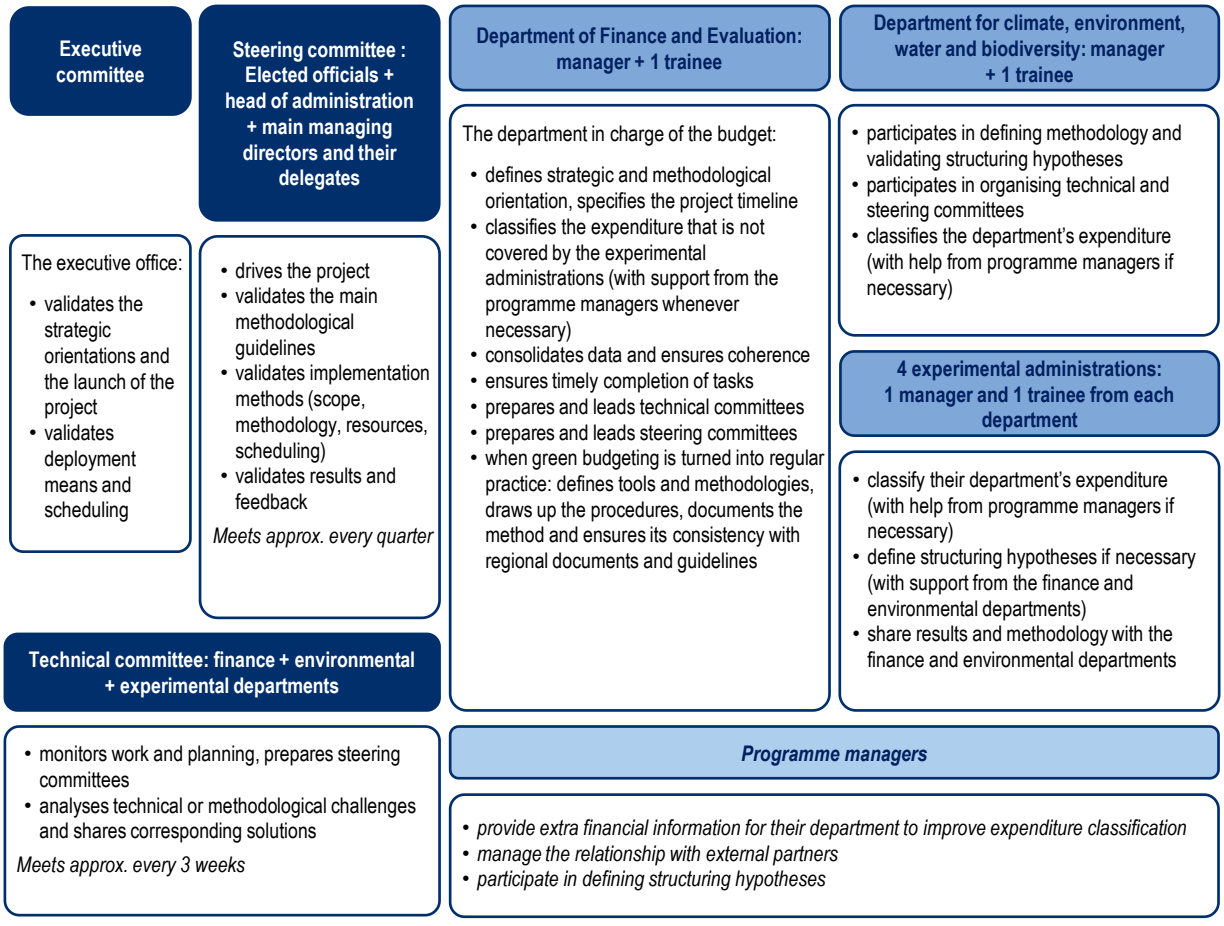
The Steering Committee leads the project, validates the main methodological guidelines and the implementation methods, defines the implementation and deployment timelines and provides feedback to the executive committee for validation. The Steering Committee meets every three to six months (May, July, and December 2021, and March 2022). The green budgeting project was officially launched during the first meeting in May 2021. During the July meeting, feedback on the analysis of the region’s closed accounts was discussed and a proposal was made for applying the green budgeting methodology to the 2022 provisional budget. The December meeting was an opportunity to discuss the adopted methodological assumptions and the next stages of the project, its expansion both from a political and an organisational point of view, and the communication objectives.

Figure 5.1. The Brittany Region organisation chart



Note: Text in italics = Green budget referents.
Source: Authors' elaboration based on Région Bretagne (2019[11]), *L'organigramme des services de la Région Bretagne*, https://www.bretagne.bzh/app/uploads/organigramme_region_avec_services_decembre_2019.pdf.

Figure 5.2. The main participants in the Brittany's project



The Technical Committee meets approximately every three weeks. Project leaders from the Finance Department lead this committee, deciding on its timetable and agenda. The committee participants – projects leaders and managers from the Finance and Environment Departments and the pilot departments – present their progress and the problems they faced, so that solutions can be found and shared. The Technical Committee met twice, in May and June. The participants presented each department's interim results, exchanged information about methodological questions referring to the expenditure classification and to the regional "structuring assumptions" (*hypothèses structurantes*) and discussed ways to provide feedback for the Steering Committee.

Bilateral meetings are also scheduled between the project team (from the Departments of Finance and the Environment) and the pilot departments to validate the classification of budget lines by the pilot departments, help to analyse the difficulties they face and share extra accounting information and additional methodological information. The Department of Economic Development and the Department for Employment and Lifelong Learning in particular need extra support, since their activities are only partially covered by I4CE's methodology, which was originally created for municipalities and inter-municipal co-operation bodies, whose responsibilities and expenditure differ from those of regions. Wherever necessary, the programme managers may be requested to provide additional information about expenditure.

The region aims to gradually integrate its various stakeholders into the project

The Regional Council intends to include the green budget within its broader sustainable development approach and to involve their various partners in creating and implementing the methodology. The Regional Economic, Social and Environmental Council (*Conseil économique, social et environnemental régional* – CESER), a regional body where companies, unions, associations and regional personalities are represented, is involved in this endeavour and will participate in the gradual mobilisation of other external regional stakeholders. The region organised information sessions to inform the CESER about green budgeting and assess the most effective ways of involving them in the process.

Brittany also relies on the regional green budgeting methodology being produced by the joint *Régions de France* (the Association of French Regions) and I4CE working group of which the region is a member (Box 5.3). However, the working group provided few answers to Brittany's initial methodological issues since the region and the group started working on green budgeting at approximately the same time. However, the working group's ongoing efforts should help to refine and confirm the scientific hypotheses needed to classify certain expenditure items that fall under regional competences and are thus not covered in I4CE's original methodology developed for municipalities, thereby ultimately reducing the number of expenditure items classified as "undefined" in Brittany's first green budget.

Box 5.3. The Régions de France – I4CE – Regions working group

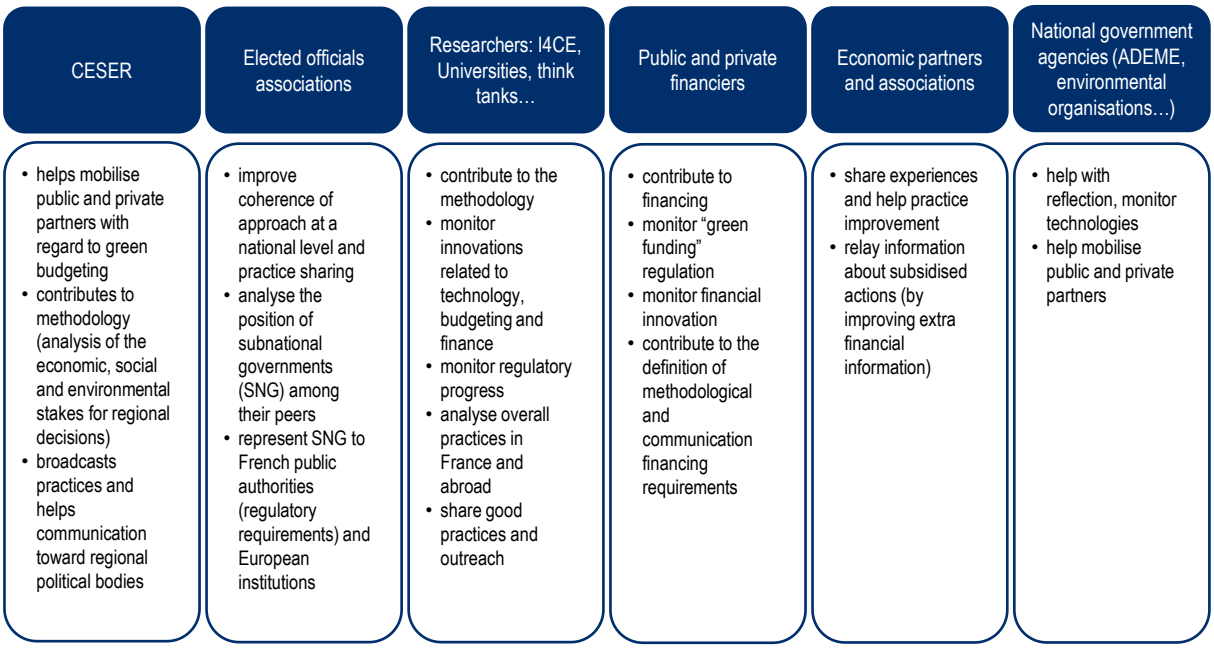
Régions de France has created a national partnership with Banque des Territoires, ADEME, CDC Biodiversity and the regions interested in the green budgeting approach (Occitanie, Grand-Est, Île-de-France and Brittany) to develop and test a green budgeting methodology; thematic workshops were organised in 2021 and 2022 for the pilot regions, with support from I4CE, to work on climate change mitigation and adaptation. A "biodiversity" methodology is also being developed in early 2022 by CDC Biodiversity and the pilot regions.

I4CE aims to update its methodological guides in the course of 2022 (for both the axes of mitigation and adaptation to climate change) to include regional specificities. Initial work facilitates the exchanges between the regions that have started green budgeting exercises or wish to do so. They also enable them to highlight methodological issues in regional priority sectors such as economic development, agriculture, or training, and to define possible common solutions to be widely shared and explained by I4CE.

The reference framework Id by I4CE will remain flexible to offer regions a common framework while allowing each of them to adapt the proposed methodology to their specificities.

Eventually, the region intends to involve all of its economic and social partners, some of whom are recipients of regional funds or are public contractors, and as such play a role in the implementation of regional policies and the achievement of regional sustainable development goals (Figure 5.3). Involving these partners in the green budgeting practice will help Brittany to disseminate green budgeting further within its territory and to expand the scope of its exercise to capture more expenditure directed towards these partners. This phase can only happen gradually, to take the regional stakeholders' constraints into account, instead of imposing a "top-down" approach. The region is considering initially putting in place a pilot group to reflect on practices and take action that is realistic and in line with the objectives.

Figure 5.3. Stakeholders to be gradually involved



Box 5.4 presents a summary of the key elements of administrative and political support and resources that Brittany had in place to launch its green budgeting exercise.

Box 5.4. Summary: High-level support and significant human resources

A green budget designed as:

- An element of the region's strategy for environment and sustainable development
- A tool for assessing the environmental impact for policy and provides decision support
- A regional transformation tool, to be shared internally and externally

A high-level approach and an organisation in project mode:

- High-level political and administrative support;
- A steering committee made up of elected officials and administrative staff, a technical committee, the lead project departments (Finance and Environment) and four pilot departments;
- Twelve people assigned to the project as well as three within the budget department (including two people almost full-time for two months);
- A progressive mobilisation of external stakeholders over time.

The initial scope and objectives of the green budgeting practice were pragmatically designed

A first climate assessment was carried out on the region's 2020 closed accounts

Brittany's green budgeting initiative was launched at the end of 2020. The region chose to develop its methodology using its 2020 closed accounts in order to start work quickly and then apply the method to

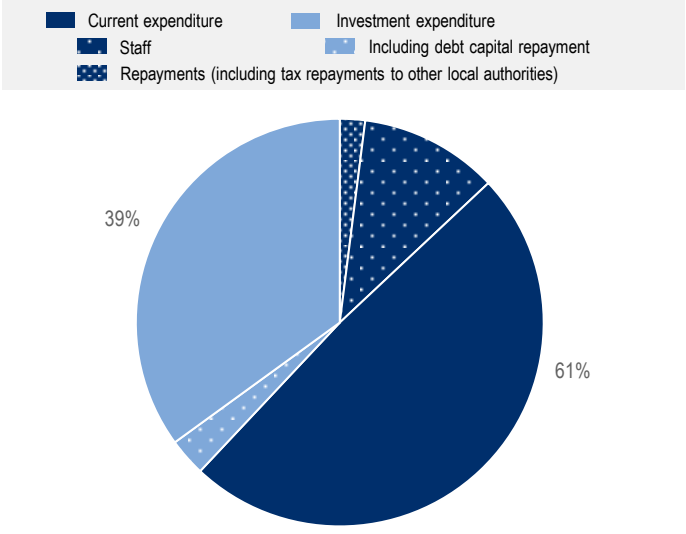
the region's draft annual budget. Work on the annual budget begins in July of the year before with a vote scheduled for the following February.

The region's 2020 closed accounts were adopted in April 2021. According to the regions' budgetary and accounting instruction (called M71), the accounts are presented and voted by function. Therefore, budgetary spending authorisation depends on the accounting function: professional training, education, culture, sports and leisure, etc. According to the regulations, the budget also includes a cross-presentation detailing the nature of the expenditure and revenues: staff, financial expenses, general expenses, taxes, endowments, etc.

Since the region aimed to carry out its first exercise before the start of the preparation of the 2022 draft budget, it had about one trimester (starting from the vote on its closed accounts) to analyse the data and provide initial feedback on the results.

In 2020, the total regional expenditure amounted to EUR 1.588 million,[3] including EUR 971 million in operating expenses (61% of total spending), and EUR 617 million in investment (39% of total spending), out of which EUR 54 million represented capital debt repayment (Figure 5.4).

Figure 5.4. Distribution of the 2020 closed accounts expenditure



Source: Région Bretagne (2021[12]), *Rapport Financier 2020*, https://www.bretagne.bzh/ressources/budget-finances/rapports-financiers-dactivites/ (accessed on 4 May 2022).

Personnel costs amounted to EUR 168 million or 11% of total regional expenditure and more than 17% of operating expenses. The largest share corresponds to non-teaching staff in high schools (53% of the total) followed by the administrative staff of the region (38% of the total) (Région Bretagne, 2021[12]).

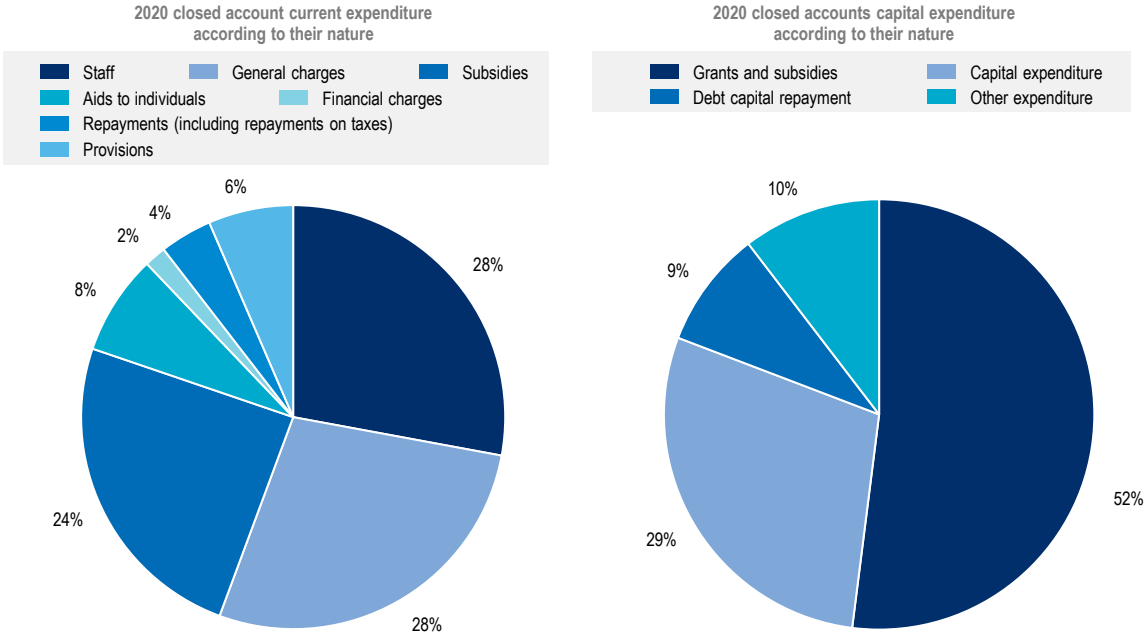
The region estimated the amount of exceptional pandemic-related expenditure in 2020 at EUR 167 million (with EUR 47 million in operating expenses and EUR 120 million in investment); EUR 137 million of this expenditure was committed and EUR 107 million was spent in 2020. This expenditure was to support local economic actors and local associations (through the National Solidarity Fund, the COVID Resistance Fund, support to regional public operators, in particular for transportation) but also to cover costs related to the region's remote-working arrangements for its staff (organisation, employee personal protective equipment, computer equipment) (Région Bretagne, 2021[12]).

For several years, French regions have been responsible for managing European Union funds (ERDF, ESF, EAFRD and EMFF). This kind of expenditure must be perfectly balanced by income, but there is a

delay between the expenditure commitment and the collection of the corresponding revenue, which disrupts the reading of accounts, especially savings accounts. Expenditure related to EU funds amounted to EUR 92 million in 2020 (with EUR 35 million in operating costs and EUR 57 million in investment). Analysing this kind of expenditure is naturally easier in the closed accounts (the operations being complete) than in the provisional budget when the exact details are not yet known.

Subsidies also make up a significant portion of Brittany's budget, both in terms of operational expenditure (just over 15% of total expenditure in 2020) and especially in terms of investment, where they represented 22% of total expenditure excluding capital debt repayment (Figure 5.5). This characteristic (which applies to all French regions) increases the complexity of green budgeting because the classification of expenditure requires a detailed analysis of each expenditure item, which requires both in-depth knowledge of the mechanisms and the nature of the expenses (requiring extra-accounting information about the beneficiaries), and awareness of potential eco-conditionality clauses in subsidies. The existing green budgeting methodology to date (mainly that developed by I4CE) has limited coverage of subsidies because it was developed for municipalities and inter-municipal co-operation bodies, whose have limited control over subsidies compared to regions.

Figure 5.5. Distribution of the 2020 closed accounts expenses by nature: Operating and investment expenditure



Source: Région Bretagne (2020[13]), *Brittany's 2020 Financial Report*.

The region manages its spending through long-term programme authorisations for investment, and through commitments authorisations for operating expenditure. These are mechanisms designed to monitor the execution of operations and limit the number of deferred operations from one budget to the next. On 31 December 2020, the stock of programme authorisations to be executed amounted to EUR 1.3 billion and that of commitments to EUR 390 million.

The budget execution rate stands at 84.8% for investment expenditure (excluding debt capital repayment) and 89.5% for operating expenses, including a provision for the prospect of loss on a large business value-added regional tax, whose proceeds were expected to decline in 2020. This proposal was ultimately dropped, due to a tax reform that led to the disappearance of this regional resource in 2021. Excluding this

provision, the budget execution rate is 96%. The level of budget execution in 2020 decreased compared to 2019, because the mandatory lockdown disrupted a part of the region's interventions (in high schools, ports, etc.) and limited certain actions (in terms of training, for example).

The region's budget nomenclature facilitated the green budgeting procedure

In accordance with French regulation, Brittany has adopted budgetary and financial guidelines. They stipulate that, besides its statutory presentation by nature and by function, the regional budget is presented according to a strategic nomenclature by programme (*Nomenclature Stratégique par Programme* or NSP) which is specific to the region and allows regional interventions to be broken down by "missions, strategic orientations and programmes".

This classification is adopted annually by the Regional Council, simultaneously with the budget vote. In general, the classification does not change from year to year in order to guarantee the readability of the report over time, particularly for the duration of an electoral mandate, and its update is therefore given priority immediately after the renewal of the Regional Council. The next update is scheduled for 2022 (and applicable to the 2023 budget), as the last French regional elections took place in June 2021.

A "programme" is made up of units for implementing actions (or all actions with the same purpose), which are linked to their objectives and expected results, and are subject to an assessment. These programmes form the operational management framework of regional public policies, and the entire operating and investment budget of the region is included in this framework with:

- Intervention programmes that allow the implementation of resources related to regional interventions; these programmes constitute a level of the vote on the budget for programme and commitment authorisations.
- Resource programmes that allow the implementation of general resources of the regional institution.

In the region's budget, there are six missions in total, plus the management of EU funds and other expenditures that are not formal missions. These six missions (land planning, economy, professional training, mobility, ecology and attractiveness) cover 58 programmes. Each programme includes lists of actions with open current or investment budgetary commitments.

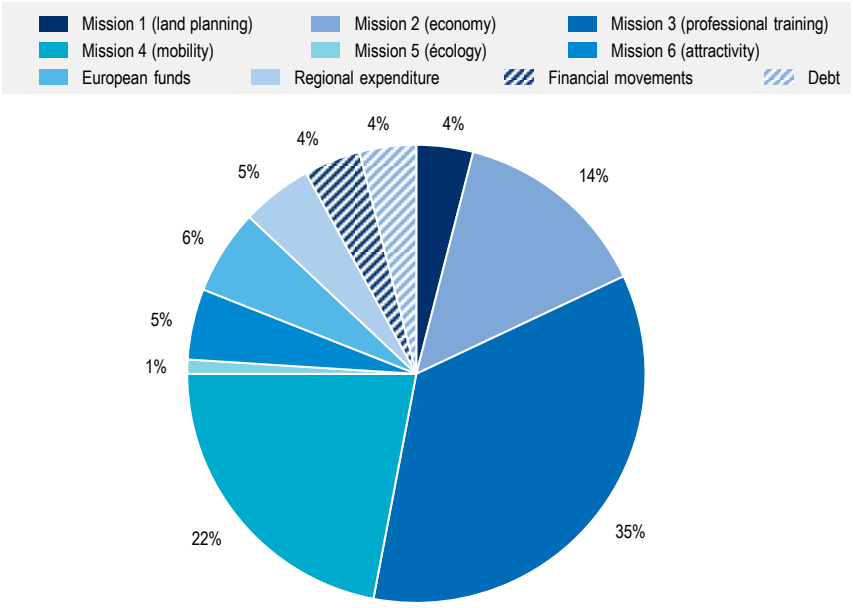
The regional financial management software specifies for each line the concerned programme, envelope, and nature of the account. The breakdown of Brittany's expenditures by mission is presented in Figure 5.6.

Expenses were categorised on the basis of mitigation and adaptation to climate change

To start the analysis quickly, the region decided to limit the scope of its green budget to focus on expenditure from two green domains: climate change adaptation and climate change mitigation. This excludes the other domains included in the European Taxonomy on Sustainable Activities, in particular water resources, circular economy, pollution, and biodiversity (EC, 2021[14]). However, few of the other existing French subnational green budgeting practices also went beyond climate change adaptation and mitigation in their analyses (Box 5.5). The advantage to Brittany of limiting the initial scope to adaptation and mitigation is that it allowed the region to move forward quickly by capitalising on I4CE's previous work, which focused on these two domains.

Climate change mitigation aims to reduce and prevent climatic changes, either by cutting emissions (reduced consumption and fossil fuel use) or by carbon sequestration (recovery of excess carbon dioxide, which is then stored in the biosphere, for example through reforestation).

Figure 5.6. The distribution of 2020 closed accounts expenditure by mission



Source: Région Bretagne (2020[13]), *Brittany's 2020 Financial Report*.

Climate change adaptation addresses the consequences of climate change and attempts to prevent or reduce their impact on people and the environment. The objective is to reduce social and ecological vulnerabilities and limit the damage resulting from climate change both in nature and socio-economic activities.

Limiting the scope to these two domains is temporary; eventually, the region aims to analyse the impact of expenditure across all of the green domains included in the EU Taxonomy. At the second meeting of the project Steering Committee, various directions for the future of the green budgeting project were considered, and in the end it was decided that:

- It seems essential to take into consideration all of the green domains over the duration of the regional mandate.
- The exercise is part of a broader reflection on the introduction of eco-socio conditionality criteria in regional intervention processes.
- The Steering Committee will oversee a deployment proposal to be validated by the Executive Committee.
- Resources and workload should be assigned with care to make sure departments are not overwhelmed. Once the exercise is completed on the 2022 provisional budget, it will be easier to assess the long-term workload and to finalise the timeline for expanding the scope of the practice.

Thus, the region analysed budget expenditures in two stages:

- With regards to climate mitigation, the region analysed each expenditure item to determine if it was favourable or unfavourable to reducing regional GHG emissions.
- Regarding climate change adaptation, the region analysed expenditure to determine whether an expenditure item might include actions with outcomes that entail climate change adaptation.

Box 5.5. The choice of green domains to be analysed

- **Occitanie Region:** The region has favoured the "climate" domains, particularly the impact on fossil fuel consumption; the regional budget is therefore mostly classified as neutral due to the prevalence of expenditure related to culture, solidarity or professional training, which is considered to have a low climate impact. The other environmental criteria (such as natural hazard prevention, water and waste management, the fight against pollution and damage to biodiversity, protection of natural areas) will be considered later. However, the region has partially integrated these criteria in its first green budget. For example, land acquisition expenses related to new high-speed lines are classified as "neutral" due to their impact on land development and on biodiversity, whereas for their climate impact alone they would receive a "very favourable" classification.
- **Grand-Est Region:** The region used the I4CE methodology and its first green budget (released in the beginning of 2022) focused exclusively on climate adaptation and mitigation.
- **Régions de France working group:** Work is being carried out on the "climate" domains with I4CE and "biodiversity" domain will be addressed by the second half of 2022.
- **French National Government:** The French government has selected six green objectives (climate change and adaptation, water resource management, circular economy, the fight against pollution, biodiversity and protection of natural, agricultural and forestry areas) for the implementation of its green budget. These are the same six domains outlined in the EU Taxonomy on Sustainable Activities.

Source: Région Grand Est (2021[15]), *Grand Est Budget 2022*, https://www.grandest.fr/wp-content/uploads/2022/01/grand-est22-budget-2022-papok.pdf (accessed on 8 April 2022); La Région Occitanie (2021[16]), *Budget Primitif 2022*; Ministère des finances (2020[17]), *Direction du Budget- Annexe 2 - Budgétisation verte*.

The budget was fully analysed considering the mitigation axis

Brittany's first green budget was carried out on operating and investment expenditure of the main budget (the region does not have subsidiary budgets) of the 2020 closed accounts. The region excluded accounting movements and repayments (mainly depreciations, provisions and repayments from the region to departments) as "out of perimeter", following I4CE's recommendations as well as the example of other French subnational government practices. In total, 8% of regional expenditure for 2020 was declared be out of perimeter.

Commitment and programme authorisations (which correspond to multi-year operating and investment commitments) have only been analysed up to the amount of the annual payments, unlike in Occitanie, for example, where the exercise was carried out both on long-term authorisations and on payment appropriations, thus providing a forecast analysis.

Brittany aims to set up a "green" multi-year investment plan (PPI) and define monitoring indicators to enable regional government departments and the general management to make the connection between the region's Transition Action Plan (see above) and the provisional budgets. This green investment planning is especially important since it will make it possible to identify the investments that could benefit from green resources offered by EIB (European Investment Bank), the *Caisse des dépots et consignations* or commercial banks, and from green financing available on financial markets.

The region classified the exceptional expenditure linked to the pandemic as “neutral”, considering that its exceptional nature would complicate the green budget’s comparative analysis over time; I4CE recommends classifying these expenses as “out of perimeter”.

Brittany had initially considered excluding expenditure related to EU funds management but in the end it was included in the analysis. This expenditure amounted to EUR 92 million in 2020. The Occitanie Region excluded these funds due to their limited room for manoeuvre in allocating them.

The region decided to include personnel costs in the overall result by prorating them according to the results of each mission, a choice which will have to be subjected to internal approval (possibly by consensus within *Régions de France* working group) before extending the practice to the provisional budget; this is a sensitive issue, given that personnel costs make up a larger share of total operating expenses (more than 17%) and even total expenses (Box 5.4).

Box 5.6. National and regional governments’ methods to analyse personnel spending

Since they represent an important share of total expenditure, personnel costs are particularly difficult to handle in green budgeting exercises.

Table 5.1. Personnel expenditure as a share of operational and total expenditure: breakdown by type of French subnational government

	Average share of personnel expenses in operating expenses (%)	Average share of personnel expenses in total expenses (%)
Municipalities	55	42
Inter-municipal co-operation bodies	38	28
Departments	21	18
Regions	19	12

Source: OFGL (2021[18]) (2021), *Rapport d’activité 2021*, https://www.collectivites-locales.gouv.fr/files/Institution/1.%20organisation%20administraive/Organismes-consultatifs/OFGL/Rapport_activite_OFGL_2021.pdf.

In the green budgeting approach, a good budget coverage requires in-depth reflection on this expenditure, with assistance from the Human Resource Department, to ensure that the agents’ activities are indeed compatible with the environmental and climate objectives included in the scope of the practice. In existing green budgeting methodologies, various options have been adopted to address personnel expenditure:

- The French government has chosen to mark staff costs as neutral for its green budgeting exercise, except for the payroll for services and departments with an explicit environmental and climate objective, which is listed as "favourable" on the objective concerned (examples: personnel assigned to manage ecological, development, and sustainable mobility policies).
- I4CE proposes to categorise personnel expenses as "non-accounting indefinite expenses", unless there is a methodology within the municipality to allow structuring assumptions and distribution keys to be applied to them. As a result, most personnel expenditure remains in this category in the I4CE methodology, except for the spending specifically labelled as “climate”. This position could change because it results in a differentiated treatment of an activity depending on whether it is internalised or outsourced.

- The Occitanie Region has classified as “neutral” almost all personnel expenditure (in particular the non-teaching regional agents of high schools that are regional staff in France).

Source: Ministère des finances (2020[17]), *Direction du Budget- Annexe 2 - Budgétisation verte*; I4CE (2020[2]), *Évaluation climat des budgets des collectivités territoriales: guide méthodologique*, https://www.i4ce.org/download/evaluation-climat-des-budgets-des-collectivites-territoriales-guide-methodologique; La Région Occitanie (2021[16]), *Budget Primitif 2022*.

Brittany has not adopted a minimum expenditure threshold, choosing to analyse expenditure from the first euro to ensure a comprehensive approach. This approach could be changed, depending on the evolution of information systems and on how sustainable the workload of the exercise is for the project teams.

To simplify the process, for competences that are delegated by the regional government to external providers (public service delegation or concession), only financial links between the region and its delegates were analysed. Similarly, the activities of local public enterprises were only viewed through the lens of regional equity investments.

The region has not extended the analysis to stocks or revenues and is not considering doing so in the near future, as it is waiting to see the results of other experiments being carried out by other French regions on the subject.

In total, more than 27 000 budget lines amounting to almost EUR 1.6 billion of actual operating and investment expenditure have been analysed according to their climate mitigation impact for the first green budgeting exercise.

The Department of the Environment and the four pilot departments proceeded directly to an in-depth analysis of their programmes. They analysed 36% of the budget lines, i.e. 53% of the budgetary volumes. The rest was analysed by the Department of Finance with support from the Department of Environment and the programme managers.

Table 5.2 shows the breakdown of the analysis among the Department of the Environment and four pilot departments.

Table 5.2. Participation in the evaluation on the mitigation axis of the Department of Environment and the four pilot departments

Department	Mission	Number of lines analysed	Investment expenditure amount (EUR)	Current expenditure amount (EUR)
DCCEB (environment)	Ecological transition	787	5 309 737	10 001 106
DIRECO (economy)	Economics	2 796	125 143 604	58 392 102
DITMO (transportation)	Mobilities	1 010	71 998 045	262 070 915
DEFTLV (Learning)	Training and high schools	1 369	6 722 810	192 771 066
DIL (housing)	Training (school construction)	3 938	103 449 482	3 792 701
Total		**9 900**	**312 623 678**	**527 027 890**

Source: (Région Bretagne, 2021[7])

Work on the "adaptation" axis is still in progress

For this first green budget, only the Department of Environment and the pilot departments' expenditures were analysed, representing a total of EUR 840 million out of the EUR 1.59 billion included within the scope of the analysis, i.e. 53% of the covered expenses. The region must continue this task in the months to come so as to cover the entire budget and make progress in analyses the climate adaptation impact of expenditure.

Box 5.7 presents a summary of the scope of the first climate assessment on the mitigation and adaptation axis.

Box 5.7. Summary: A first climate assessment on the mitigation and adaptation

The exercise was carried out on the operating and investment expenditure of the 2020 closed accounts.

The task was achieved starting from the regional accounting by nature and by function, supplemented by the strategic nomenclature by programme (NSP) and non-accounting information provided by the participating regional government departments.

The scope was restricted to climate adaptation and mitigation for the first regional green budget.

- 8% of regional expenses were declared out of perimeter.
  - EUR 1.588 billion and 27 000 budget lines were analysed according to their climate mitigation impact. The Department of Environment and the four other pilot departments analysed 36% of the budget lines and 53% of the amount of expenditure included in the scope.
  - EUR 840 million was analysed under the adaptation axis but work is still in progress to achieve full budget coverage.

The methodology is adapted to each axis of analysis

Expenses are classified into one of four categories under the mitigation component

Brittany relied on I4CE's methodology to classify its expenditure under the mitigation component. A given expenditure item can be classified into one of four categories: "highly favourable", "rather favourable", "neutral" or "harmful". I4CE also listed two additional categories for expenditures which are not analysed: "out of perimeter" and "undefined". Expenses can be undefined when there is no methodology available to classify them ("undefined by methodology") or when the information necessary for their classification is unavailable ("extra-accounting undefined").

This classification system considers the actual impact of an expenditure item rather than the intention or the stated objective. Thus, expenditure whose objective is favourable to mitigation may have a negative effect on the climate, so it will be classified as "harmful"; conversely, a measure can have a positive effect on the climate even though that was not the original goal, in which case it will be classified as "rather favourable" or "highly favourable", according to its impact (e.g. public health measures that affect the climate).

It should be noted that other methodologies, such as the OECD's Rio Markers or the one used by the French government for its green budget, have adopted different positions (Box 5.8).

Box 5.8. The different methods of classifying budgetary expenditure

- **Occitanie**: The Occitanie Region has retained the same number of categories as Brittany. Therefore, the following categories are used: expenses out of perimeter, expenses to be defined (corresponding to the "undefined" category in Brittany Region), harmful, neutral, rather favourable or highly favourable.
- **Grand-Est**: The region has adopted the same methodology for the creation of its green budget and kept the I4CE's methodology, based on the same granularity (highly favourable, favourable, neutral, harmful, to be defined and out of perimeter).
- **French government:** The French government classifies favourable expenditures into three categories: expenses with a main environmental objective or directly participating in the production of an environmental good or service, those without an environmental objective but having a proven indirect impact, and those that are favourable but may present a long-term risk of carbon lock-in. Neutral expenses are those without a significant effect or whose information is unavailable or insufficiently documented. Harmful expenses cause direct harm to the environment or encourage harmful behaviour. Considering all the environmental axes, a category of "mixed" expenditure has also been defined, favourable to the environment on at least one axis but having negative effects on one or even several other axes (mainly transport infrastructure, especially railways).
- **The European Union:** The EU budget is monitored for environmental impact but focuses mainly on the climate. The evaluation is based on the OECD's coefficients known as the DAC "Rio markers", which attribute a coefficient of 100% to expenditure which makes a significant contribution to climate objectives, 40% when the contribution is moderate and 0% when it is insignificant or zero. The same type of methodology is being developed for expenditure in favour of biodiversity. From 2022, it should be possible to measure air quality expenditure as well. The methodology as a whole does not look at harmful expenditure.

Source: La Région Occitanie (2021[16]), *Budget Primitif 2022*; Région Grand Est (2021[15]), *Grand Est Budget 2022*, https://www.grandest.fr/wp-content/uploads/2022/01/grand-est22-budget-2022-papok.pdf (accessed on 8 April 2022); Ministère des finances (2020[17]), *Direction du Budget- Annexe 2 - Budgétisation verte*; EC (2014[19]), *Short Guide to the Use of Rio Markers*, European Commission, https://europa.eu/capacity4dev/public-environment-climate/wiki/short-guide-use-rio-markers.

"Favourable" expenditure must therefore reduce emissions, either directly or by substituting for more carbon-intensive alternatives: if it is carbon-neutral it will be categorised as "highly favourable", and in other cases, "rather favourable". Expenditure is "neutral" if it has no significant impact, and "harmful" if it leads to an increase in emissions.

When expenditure is known to affect the climate, it must be analysed and classified into one of the aforementioned four categories using a set of "structuring hypotheses" or assumptions. Brittany initially used the structuring hypotheses developed by I4CE for municipalities and inter-municipal co-operation bodies, which are based on an objective of net-zero emissions by 2050 which corresponds to the French National Low-carbon Strategy (SNBC). I4CE defined nine sectoral structuring hypotheses (for construction, transport infrastructure, vehicle purchase and maintenance, highways, food, waste, energy purchases, energy network and infrastructure, software and new technologies, and green spaces – see Box 5.9) and six transversal hypotheses (for personnel expenditure, business travel expenses, climate taxes, subsidies, public procurement and sustainable purchasing, carbon compensation). Regional expenditure is therefore analysed based on its contribution to achieving the net-zero emissions by 2050 objective, relying on I4CE's

sectoral or transversal hypotheses to determine whether an expense contributes to reducing or increasing emissions, or has no impact (provided that the sector is covered by the methodology).

Given the jurisdictional differences between municipalities and regions, the I4CE methodology does not cover all regional competences; therefore, if I4CE hypotheses either do not exist or are not completely compatible, the region must design them internally. Regardless of the institution that designs them, these hypotheses must have a solid scientific basis. Brittany worked with *Régions de France* and I4CE on these additional hypotheses, specifically in the areas of economic assistance, training, and agriculture. I4CE plans to include regional specificities in its methodological guides in 2022.

The accounting nature and function of the expenses allow the region to quickly identify the lines that need to be analysed. For example, expenses recorded under the accounting classification for "fuel" in the nomenclature by nature or expenses recorded under the "Transport" function of the nomenclature by function are immediately identifiable as in need of analysis. They may be supplemented with extra-financial information provided by programme managers.

In some cases, the available information does not allow for a precise enough description of expenditure to reliably classify it (e.g. "extra accounting indefinite" for training expenses), or the region does not have a methodology to classify certain sectors (lack of structuring hypotheses lead to an "undefined by methodology" classification). For expenditure related to agriculture, for example, no classification methodology had been defined in Brittany at the beginning of the green budgeting exercise.

This share of expenses classified as "undefined" should decrease over time due to the involvement of the administration and its partners (delegates, service providers), the improvement of information systems and methodological advances.

It should be noted that this approach does not include a counterfactual scenario to measure the negative effects that were avoided thanks to regional policies, especially the "sobriety measures" taken by the region (e.g. savings, consuming less or better). Similarly, the progress of ongoing environmental and climate projects is not assessed either.

Box 5.9. Example of I4CE "structuring hypotheses" for energy purchases

- Electricity: electricity expenses are classified as "neutral", except for contracts subject to a guarantee of renewable origin, classified as "highly favourable".
- Gas: the consumption of fossil natural gas is classified as "harmful".
- Renewable gas: classified as "highly favourable".
- Fossil fuels, except natural gas: gasoline, diesel, LPG, crude oil and coal are generally counted as harmful. The share of agrofuels incorporated into any fossil fuel (E5, E10, diesel, etc.) is classified as "undefined".
- Agrofuels: classified as undefined. (NB: the European Commission has introduced a 7% cap on first-generation biofuels in transportation).
- Hydrogen: classified as "rather favourable".

Source: I4CE (2020[2]), *Évaluation climat des budgets des collectivités territoriales : guide méthodologique*, https://www.i4ce.org/download/evaluation-climat-des-budgets-des-collectivites-territoriales-guide-methodologique.

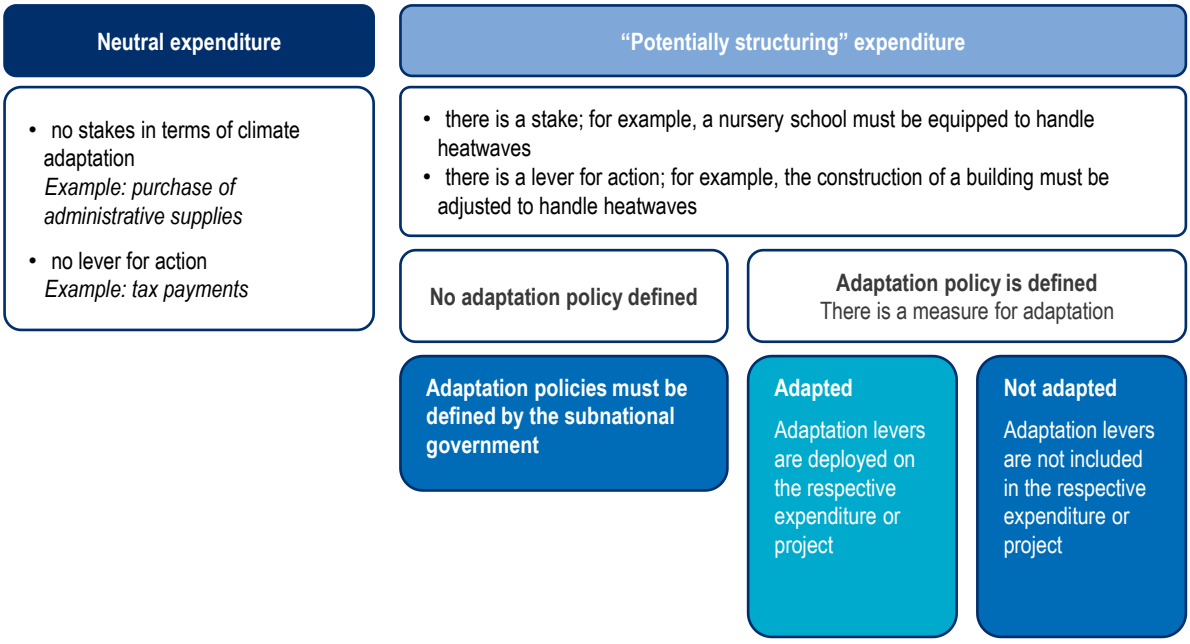
I4CE's methodology related to adaptation will be gradually integrated

The methodology for defining and incorporating the risks and policies implemented in terms of climate change adaptation is widely documented in the scientific literature, in particular in the Intergovernmental Panel on Climate Change (IPCC) work.[4] There is considerable existing academic work and scientific literature (including from the IPCC) on: i) how to define and measure the risks associated with climate change; ii) how to define a policy for adapting to change; and iii) how to measure the existence or not of climate change adaptation policies.

A prior analysis of regional issues and levers for action is necessary

Brittany relied on I4CE's methodology to measure the budget's impact on climate change adaptation (Figure 5.7). In contrast to the methodology for analysing the climate mitigation impact of the budget, the methodology used to measure the adaptation impact is not universal because it depends on regional characteristics. Therefore, the region must determine its own climate issues and the resulting adaptation trajectory.

Figure 5.7. Classification of expenditure under the "adaptation" component, I4CE methodology



Source: Translated from I4CE (2020[2]), *Évaluation climat des budgets des collectivités territoriales : guide méthodologique*, https://www.i4ce.org/download/evaluation-climat-des-budgets-des-collectivites-territoriales-guide-methodologique.

The region must analyse:

- The issues: What are the locations, activities or services and populations for which there are adaptation issues? This analysis determines the government's levels of exposure and vulnerability. There is an issue when there is an exposure (probability and intensity of climate hazards) and a vulnerability.
- Management: What responses have been put in place to improve the government's adaptation capacity?
- Evaluation: How relevant are these responses?

This process is essential because it provides an overview of public policies.

Expenditures may be classified as:

- "Neutral" if they do not have any impact on the region's climate adaptation potential or if there is no leverage on them.
- "Potentially structuring" if they refer to a regional action with an action lever and relate to a population, a territory, an activity or a service that could be significantly affected by climate change. For example, the construction of a building may incorporate bioclimatic criteria that enable natural cooling in summer.

When they are potentially structuring, expenditures may be:

- Covered by an adaptation policy:
  - Which can itself be "suitable": the region's adaptation measure for this type of expenditure has been put in place.
  - Or be "unsuitable": for example, there is an accommodation policy in the region, but it has not been adhered to.
- Or not covered; for example, if new housing construction projects do not include adaptation criteria.

These classification efforts should enable the region to measure the existence and implementation of climate adaptation policies within the budget and ultimately lead to taking climate risks and the necessary adaptation policies into account from the time of the projects' definition and vote.

The diagnosis carried out is not frozen in time and the answers provided are even less so. Both the adaptation and the mitigation methodologies need to consistently incorporate the latest scientific findings.

Accounting by nature and by function helps to identify "potentially structuring" expenses

The accounting documents of the French regions are presented both by type (personnel costs, current and financial expenses, etc.) and by function (education, transport, economic action, etc.). This double entry makes it possible to obtain important information for the classification of expenditure according to the adaptation axis. In particular, accounting by nature and by function helps to identify "potentially structuring" expenditure within the budget. Accounting by function provides information on adaptation issues, for example on expenditure related to the "public high schools" function. The regional strategic nomenclature by programme (NSP) can also provide additional information.

Accounting by nature mainly sheds light on expenditure where climate adaptation criteria could be incorporated. For example, expenditure reported for "school building construction" would have an adaptation lever. The main adaptation levers generally relate to capital expenditure.

Regarding the "adaptation" component, I4CE recommends proceeding in stages. Step 1 of their methodology stipulates that "neutral" and "potentially structuring" expenses must be defined. During step 2, the subnational government can make a first selection within the potentially structuring expenses to determine the ones covered by an adaptation policy, and step 3 aims to ensure that the adaptation policies put in place are "suitable".

The region is not considering a consolidation of the analysis axes

Brittany is not considering combining their analyses of the climate mitigation and adaptation impact in order to keep an accurate vision of each axis analysed. Their green budgeting work is therefore carried out and presented individually for each green domain, in this case just climate change adaptation and mitigation.

Various ways of summarising the results of the analysis are nevertheless available and could be added in the process, for example based on the method developed by the French government for its own budget.

Box 5.10 summarises the regional methodology applied for both mitigation and adaptation components.

Box 5.10. Summary: A methodology specific to each green domain

The regional methodology is based on the work carried out by I4CE.

There was an initial sorting of expenses "out of scope" and expenses to be analysed for the climate change mitigation component:

- "Structuring hypotheses" defined by I4CE or by Brittany are applied to the expenses to be analysed.
- Expenditure items to be analysed are classified into one of four categories: "neutral", "rather favourable", "very favourable" and "harmful", or into either extra-accounting or methodological "undefined" when information or a methodology is not available to classify the expenditure item.

For the climate change adaptation component:

- The region defines the issues specific to its territory.
- Expenses can be "neutral" or "potentially structuring" if there is an issue and a means of action in terms of adaptation to climate change.
- The next step consists in measuring the "potentially structuring" expenses for which appropriate measures have been taken.

The different axes of analysis (adaptation, mitigation) are not consolidated.

The project team supervised the expenditure classification

The finance department has prepared an analytical framework for green budgeting

The Department of Finance and Evaluation has built internal databases, in Excel format and compatible with the regional accounts, in order to list all the budget commitments and to provide a preliminary screening of the regional budget.

For each programme or set of programmes in each department, a file details all operating and investment expenditure. For each commitment, information is given about the programme, the operation, the action, the commitment label, the corresponding third parties, the detailed functional and accounting classifications and the amount of the expenditure. This information is then used to determine whether to classify the expenditure as out of perimeter, neutral, undefined or requiring analysis, according to its accounting nature or function.

When the expense requires analysis, the corresponding I4CE structuring hypothesis is indicated. A column for "Structuring Hypotheses Region" was added to record hypotheses defined internally by the region, whenever I4CE's hypotheses either do not cover the field under consideration or are not compatible with regional characteristics.

Expenditure was classified by the project team departments (finance and environment) and the four pilot departments

The aforementioned Excel files were distributed to the four pilot departments and the Department of Environment when the data included within them was relevant to each department's policy domain, otherwise the files were passed along to the Department of Finance, which was responsible for analysing

all other budgetary expenditure not attributed to the Department of Environment and the other pilot departments.

This preparatory work helped to analyse expenditure at the highest level of the internal budget classification by mission and based on accounting data by nature and by function.

Whenever necessary and possible, programme managers were consulted to supplement the available accounting information with extra-financial elements in order to classify the expenditures[5] more precisely. Since the exercise is both resource and labour intensive, the Department of Finance was unable to carry out this kind of analysis for the other budgetary lines.

I4CE's structuring hypotheses were used to classify expenditure whenever they were available and relevant. If this was not the case, the participating departments developed their own structuring hypotheses based on well documented scientific data, be it internal or external to the region.

The Department of Environment, with support from the energy and climate teams, played an advisory role for the four pilot departments. They arranged customised green budgeting training for them, to explain the I4CE methodology and to help define the missing structuring hypotheses based on *ADEME* studies, French government research (particularly in the context of the low-carbon strategy), the European Union Taxonomy, and other scientific documentation and reports.

The challenges and questions encountered during the regional exercise have also been shared within the *Régions de France*/I4CE working group. However, the region benefited only slightly from the support of this group in the first part of their exercise, due to the late start of the working group activities compared to Brittany's progress.

For Brittany's first regional green budget, the lack of I4CE structuring hypotheses mainly impacted classification of expenditure in the economic development, agriculture and training sectors, which were not covered by I4CE in its work for the municipal sector (they are municipal competences) and for which the available information was not detailed enough. The working group set up with *Régions de France* is striving to cover these fields, in an effort to improve regional structuring hypotheses.

In terms of economic development, the classification of subsidies could be determined depending on the existence (or absence) of climate conditionalities, paired with exclusion lists. It should be noted, however, that conditions often extend over a broad field, which also includes social or even economic criteria, in addition to climate or environmental concerns. As a result, detailed project analysis, in particular detailed end-use, is still necessary to classify subsidies. Such analysis requires input on the climate strategy of the subsidised organisation or the project's effect on reducing greenhouse gases.

Another option for economic development classification may be to rely on the EU Taxonomy when the subsidy to be classified relates to a company instead of a project (since, for the latter, the local authorities can use their own specific structuring hypotheses). However, this option is not without challenges, because the EU Taxonomy sets out performance criteria for six green objectives rather than only on climate-related issues. In any case, only thorough knowledge of the financed organisation could enable the distribution of the company's turnover among its activities.

In both classification methods, it is essential to collect and store extra-financial information in order to build proxies that allow for an easy classification of expenditure based on its climate mitigation impact. At this stage in the project, Brittany is leaning towards using the EU Taxonomy. Nevertheless, additional analysis and a determination of the cost of working time and information systems upgrades are still required to determine the most appropriate methodology.

Classification of expenditure within the higher education and vocational training sectors also poses a methodological challenge and offers different classification options, depending for instance on the skills acquired at the end of the training (jobs contributing to the green transition), or on the activities and content of the training. These options require further consideration of both form and substance, specifically related to whether the information necessary for the classification would realistically be accessible and sufficiently detailed at the time of the budget vote.

As part of the *Régions de France*/I4CE working group, Brittany has positioned itself as a leader regarding the methodological work on agriculture-related expenditure. There is a need for significant methodological developments in this field, in which Brittany has particularly high stakes considering the importance of the agricultural sector in the region.

The finance department consolidated the results to obtain an overview of the regional budget

Once the pilot departments completed the classification process (including, wherever applicable, the process of defining structuring hypotheses), the results were consolidated by the finance department and presented to the Steering Committee.

Box 5.11 proposes a summary of the methodology used for the green budget analysis on the 2020 closed accounts carried out by the region of Brittany.

Box 5.11. Summary: Analysis of the 2020 closed accounts

The finance and environment departments provided methodological support (training in green budgeting or climate assessment, support for the definition of structuring hypotheses) and practical help (providing data in Excel format) to the four pilot departments that participated in the project.

The classification work and the definition of structuring hypotheses for fields that were not covered by I4CE methodology were shared between the finance, environment and pilot departments.

The analysis of expenditure of the regional departments other than the pilot directions was carried out in-house by the project team.

The finance department ensured the consistency of data consolidation and presented the results to the Steering Committee in July 2021.

The initial results were released on time, highlighting improvement opportunities

The results of the first climate assessment, carried out on the mitigation and adaptation axes, were presented to the project's Steering Committee in July 2021. These results demonstrated that the endeavour had been successful on the mitigation axis, while the budget was still only partially covered on the adaptation axis.

In any case, this is merely a pilot evaluation, therefore developments are expected, which explained why the region did not publically communicate these initial results. Refinements may relate to finishing work on the adaptation axis or to strengthening the methodology on the region's specific competences (economic development, training, agriculture) for a deployment in forthcoming provisional budgets.

"Undefined" expenditure has been limited thanks to the development of internal structuring hypotheses

The finance department consolidated the data provided by the regional departments, thus offering both an overview and a classification by mission of the climate mitigation budget.

The classification was made based on accounting information, completed by the region's strategic nomenclature by programme and, for the pilot and environment departments, with extra-financial data to qualify expenditure better. In the area covered by the finance department, only data from accounting and the NSP has been used.

The region produced two versions of the climate mitigation budget: in one of them only the I4CE structuring hypotheses were used, while in the second, these were supplemented with hypotheses developed internally by the region. Indeed, if the I4CE methodology made it possible to adequately cover public transportation or building expenses, for fields like economy, agriculture or training the region had to define a significant number of structuring hypotheses (or classify the corresponding expenditure as "undefined").

The addition of structuring hypotheses specific to the region made it possible to lower the share of "undefined" expenditure from 37% to 23% compared to the outcome derived from a strict application of I4CE hypotheses. It also helped refine expenditure distribution among the various categories (undefined, harmful, neutral, favourable, very favourable).

The processes of gaining more in-depth knowledge of expenditure items and defining additional structuring hypotheses are ongoing. Thus, while the share of "undefined" expenditure is quite low for the mission "Territorial Attractiveness", it continues to be high for the missions "Economy" and "European Funds" following this first evaluation.

The classification of expenditure as "favourable" or "harmful" is also expected to be refined as a result of the collaboration with *Régions de France*, particularly for the fields that were little or poorly covered by I4CE methodology (i.e. Economy, Professional Training, Ecological Transition).

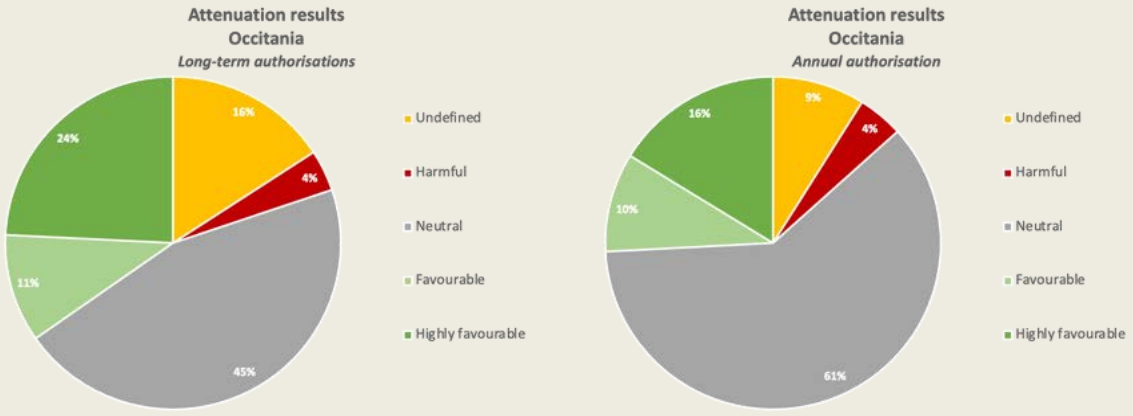
The results are provisional and require further internal validation on certain classification decisions. Comparing Brittany's methodology with those of other regions within the *Régions de France*/I4CE working group should also help refine the methodology and the structuring hypotheses. An example is provided with the Occitanie Region (Box 5.12). For this reason, the Brittany Region has not planned on publishing the results of this first exercise, which will be refined and customised to the budgetary planning in the course of 2022.

Box 5.12. Results from the Occitanie Region

The Occitanie Region produced its first green budget using 2021 preliminary budget and mainly focusing on climate mitigation. The region adopted and customised I4CE's method. Some 80% of regional expenditure was analysed, setting aside EU funds as well as expenditure related to the health and economic crises.

The green budget was carried out on the annual expenditure of the provisional budget and on the long-term capital expenditure authorisations. Figure 5.8 presents the results of the region's first climate budgetary assessment.

Figure 5.8. Mitigation axis results: The Occitanie Region



Source: La Région Occitanie (2021[16]), *Budget Primitif 2022*.

"Potentially structuring" expenses in terms of adaptation to climate change have been identified

I4CE's methodology enables a gradual assessment of the climate adaptation impact of the budget. Brittany has implemented the first stage of this method, which consists, on the one hand, of identifying the climate adaptation needs characteristic to its territory and on the other hand, of an initial expenditure classification into two categories: neutral or "potentially structuring".

The region relied on its own climate adaptation needs

The region analysed its climate vulnerabilities using a "vulnerability tree" (Figure 5.9). Based on the work carried out by the Brittany Observatory of the Environment, this analysis represented the region's key challenges, which vary depending on geography: urban, coastal or inland.

The following six-step roadmap has been defined to ensure Brittany's resilience to climate change (Région Bretagne, 2021[7]):

- Organise and monitor knowledge, support research and innovation.
- Strengthen governance, territorial cohesion and local stakeholder capacities.
- Support adaptation education and awareness.
- Adapt land development policies and prevent or manage risks for a resilient territory.

- Manage natural resources from a climate change perspective.
- Support economic sectors in terms of transformation and adaptation.

Parts of the regional budget still remain to be analysed under the adaptation axis

Based on the vulnerability tree findings, the Department of Environment and the other pilot departments established an initial classification of expenditure as “neutral” and “potentially structuring”. The scope of the analysis for the adaptation axis was restricted to Department of Environment and the 4 pilot departments and EUR 840 million in expenses were analysed, representing 53% of the total operating and investment expenditure in the region’s 2020 closed accounts.

Figure 5.9. Britany’s adaptation vulnerability tree

Source: Région Bretagne (2021[7]), *July 2021 Steering Committee Meeting*.

After this first stage, the region intends to cover all expenditure and then expand the analysis to stages two (assessment of expenditure covered by an adaptation approach) and three (assessment of expenditure that was adapted to take climate change into account) of the method.

Green budgeting work on the "adaptation" axis should ultimately include climate adaptation considerations within decision-making processes and help to develop a regional climate change adaptation action plan.

The green budget must become an additional management tool for the region’s environment and climate strategy

The region has an early estimate of the climate adaptation and mitigation impact of its budget. The “mitigation” component makes it possible to identify both favourable and harmful expenditure. Harmful expenditure does not necessarily represent budget lines to be eliminated in the short or medium term, especially since in some cases green alternatives do not exist, and these expenses may be essential from an economic or social point of view. Similarly, some neutral expenditure is bound to remain so; there is no “optimal” share of green expenditure within the budget. The “adaptation” section also ensures that regional policies take the need for adaptation to climate change into account and that the projects for which action levers do exist actually include the necessary measures. (Box 5.13) summarises the results obtained by Brittany for its first climate budgetary assessment.

Box 5.13. Summary: Encouraging results for the first climate tagging exercise in Brittany

Current and capital expenditure were totally classified under the mitigation axis with a large internal enrichment of the I4CE methodology in order to adapt to regional specificities.

About a third of the analysed expenditure was classified as "potentially structuring" under the "adaptation" axis.

Further work is required, aiming to cover the entire regional budget on the "adaptation" axis on the one hand, and to reduce the share of undefined expenditure and fine-tune the structuring hypotheses for the "mitigation" axis on the other hand.

The willingness to use the green budget as a decision-support tool for budget arbitration and as a monitoring tool to improve the region's environmental trajectory has been reaffirmed.

A first green budget is therefore a reference that helps trace and monitor an improvement trajectory for the region; a more in-depth understanding of expenditure remains necessary to achieve it, as well as further reflection on the structuring hypotheses, so as to reduce the share of undefined expenses and to ensure that the region's overall budget contributes to the green objectives defined in its programming documents. Thus, the green budgeting practice is not intended to replace the other monitoring tools set up by the region for its green policy, but to complement them in order to provide additional insight and a new decision-making tool for budget arbitrations.

Applying the green budgeting methodology to revenues is not considered at this stage

Brittany did not include regional revenues in its first green budgeting exercise

Brittany is not currently considering including revenues within the scope of its green budgeting practice.[6] This methodological choice is justified both out of pragmatism – a willingness to proceed one step at a time to get results quickly – and out of lower interest for this approach, given the limited room for manoeuvre afforded to French subnational governments in terms of revenues, especially tax revenues. This lack of room for manoeuvre is accentuated by the need for local and regional governments to keep their budgets balanced while at the same time dealing with expenditure corresponding to competences that are compulsory and for which there is little leeway.

Green revenues are currently defined in a piecemeal and non-consensus way:

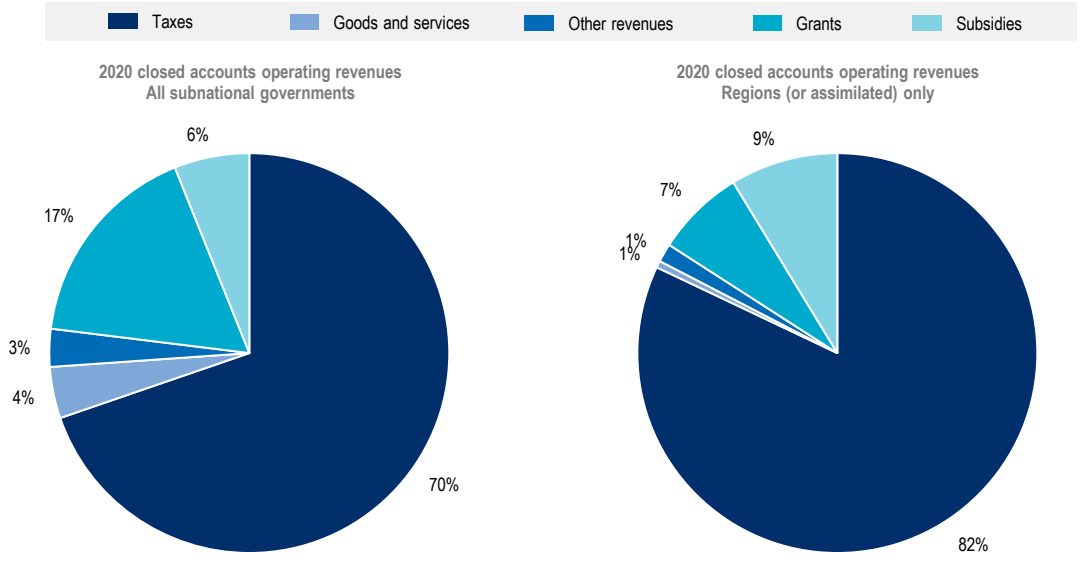
- The scope is most often limited to the environmental taxes defined as taxation (or similar products) sending price signals to taxpayers, or whose proceeds finance environmental expenditure. The actual effect of taxation on behaviour is, however, not always possible to quantify.
- There are also several types of funding called "green" financing because they are directed towards green projects; these could be loans, bonds, grants, or subsidies.
- Lastly, some grants or subsidies are subject to eco-conditionality clauses and may fall into the category of "green" revenue, whereas they are not necessarily intended to finance environmental expenditure.

Careful reflection on the link between these different financing options and their share in the regional budgets is an issue raised by the region. In particular, the link between long-term green financing and green budgeting of expenditure deserves special attention.

Tax revenues account for more than 80% of regional operating revenue

In 2020, the operating revenue of subnational governments and that of regions in France were distributed as shown on the graph (Figure 5.10). Taxes account for approximately 70% of total subnational government operating revenue, with this share rising to 82% for French regions. For regions, this proportion has increased in recent years, especially after a part of the national government's operating grants to regions were replaced with VAT revenues. Other regional operating revenue includes the general decentralisation grant and compensation linked to tax reforms and tax exemptions, equalisation funds, and EU funds.

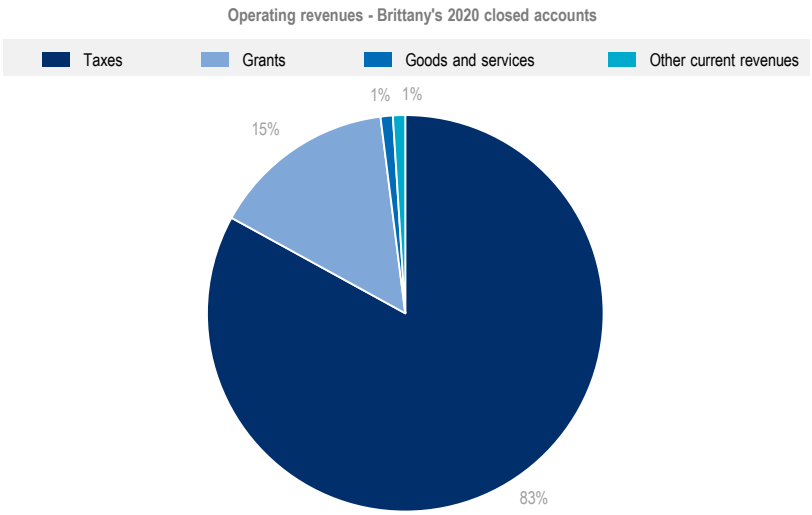
Figure 5.10. Subnational operating revenue distribution in France in 2020 (all subnational governments and all regions only)



Note: In France, operating revenue comes from direct and indirect taxation, central government current grants and subsidies, user charges and fees and property income.
Source: Direction Générale des Collectivités Territoriales (2021[1]), *Rapport de l'Observatoire des finances et de la gestion publique locales - Les finances de collectivités locales en 2021*.

In Brittany (as well as in the other French regions), taxes constitute the bulk of operating revenue (83%) (Figure 5.11). Grants amount to 15% of the operating revenue and consist mainly of national government allocations and EU funds. Revenues from public services and property income are minimal (1%).

Figure 5.11. Britany's distribution of operating revenue



Source: DGFiP-DGCL (2022[20]), *Finances locales - régions et CTU - comptes individuels des régions*, https://www.collectivites-locales.gouv.fr/finances-locales-regions-et-ctu.

Regional room for manoeuvre on taxation is limited

According to the definition used by the French government in the context of its green budgeting exercise, regions have three types of environmental tax revenue (defined as revenue meant to have an impact on consumer behaviour): taxes on energy consumption products, taxes on car registration certificates, and specific taxes on companies using public infrastructure networks (Box 5.14).

Box 5.14. French government green revenue budgeting

The French government has defined public environmental resources as "deductions prescribed by the public authority, whose parameters (calculation methods, taxpayer coverage, products or services concerned) are linked to: energy, transportation, natural resources (including the soil), products discharged into the environment or the impact of human constructions on the soil. These fields were selected based on the environmental challenge they pose". The measurement of environmental revenue includes taxes allocated to the financing of the State budget but also those intended for other public actors, such as subnational governments.

In addition to taxes and duties, environmental revenue includes some of the public property user fees. Conversely, fees related to the use of public infrastructure or other similar services (non-concession motorway tollgates, for example) are not taken into account, being regarded as a "price" rather than a levy.

The use of environmental resources is not restricted to financing environmental policies, therefore the resulting revenue is not compared to "favourable" expenses.

The French government estimates that public environmental resources amount to EUR 64.8 billion.

Source: French Government (2021[21]), *Rapport sur l'impact environnemental du budget de l'État, PLF 2022*, https://www.vie-publique.fr/sites/default/files/rapport/pdf/281883.pdf.

A detailed analysis of regional taxation shows that the region has little room for manoeuvre on taxes, both in terms of the tax bases and rates. This is amplified by the fact that an increasing share of this revenue is collected out of their jurisdiction (Table 5.3).

Table 5.3. Breakdown of Brittany's tax revenues

	Amount (EUR thousands)	In %	Description	Environmental tax
CVAE (contribution on the added value of companies)	378 942	37	Regional share **removed in 2021** and replaced by a fraction of VAT.	No
CA CVAE (compensation attributions of the value-added contribution of companies)	1 785	0	Tax paid by the departments to the region in compensation for transfers of their competence towards the regions in terms of transport operations in 2016.	No
IFER (flat rate taxes on companies using public infrastructure networks) Regional IFERs are applied on the railway rolling stock used on the national rail network for passenger transport	29 013	3	Amount calculated by **applying a tariff to the number of pieces of equipment** available to the company. Amounts and prices recalculated annually according to the Finance law. Rates vary **by material category**: thermal, electrical, or towed gear.	**Yes** **Transport Domain** Tax not designed for environmental purposes But the additional tax on diesel equipment meets the objectives of the environment policy within the *Grenelle* framework (promote the use of less polluting means of transport)
FNGIR (National Fund for Individual resource guarantee)	27 609	3	Compensation fund implemented in 2011 to ensure the financial neutrality of the professional tax removal. The amount is flat. No leeway.	No
Regional resource equalisation funds	736	0	This fund is intended to evolve to take into account the removal of the regional share of CVAE.	No
TICPE (domestic tax on energy consumption products): • LRL Modulation • **Grenelle increase** • **Professional training and learning share**	201 457	20	LRL modulation Amount transferred by the National Government for charge compensation; the amount depends on the assessment of transferred charges.	Yes Energy Domain Carbon component (energy climate contribution) integrated into the tax to encourage less polluting means of transport. Contribution amount frozen until 2022 by the 2019 Finance bill
	31 536		Grenelle markup Share of the TICPE on which the regions can raise tariffs for the financing of the sustainable transport infrastructure. All regions have reached maximum rates (except for Corsica and Auvergne-Rhône-Alpes).	
	10 953		Share for vocational training and apprenticeship A share of the TICPE benefits to professional training.	
Regional share of VAT	184 618	18	Share of VAT transferred to compensate for the removal of an overall state allocation and for successive tax reforms. No rate taxation power.	No

	Amount (EUR thousands)	In %	Description	Environmental tax
Tax on car registration certificates	120 522	12	Rate set by each region and tax amount depending on the vehicle's fiscal power. "Clean" vehicles may be exempted either fully or by 50%, at the region's discretion. The Brittany Region chose a 50% exemption.	**Yes** **Transportation Domain** The regions can freely set the rates for this tax; possibility of "clean" vehicle exemptions
Others	34 399	3	Management fees and other taxes.	No
Total taxes	**1 021 570**	**100**		

Source: Authors' elaboration based on DGFiP-DGCL (2022[20]), *Finances locales - régions et CTU - comptes individuels des régions*, https://www.collectivites-locales.gouv.fr/finances-locales-regions-et-ctu.

The share of VAT repaid to Brittany in total tax revenue is 18% in 2020; it should dramatically increase in 2021 due to the elimination of the regional share of the CVAE compensated by a new share of VAT.

An in-depth analysis of regional revenues allows for the measurement of tax loopholes harmful to the environment and climate. Including revenues within the scope of green budgeting can also take into consideration these elements, but this is not necessarily the case among existing practices.

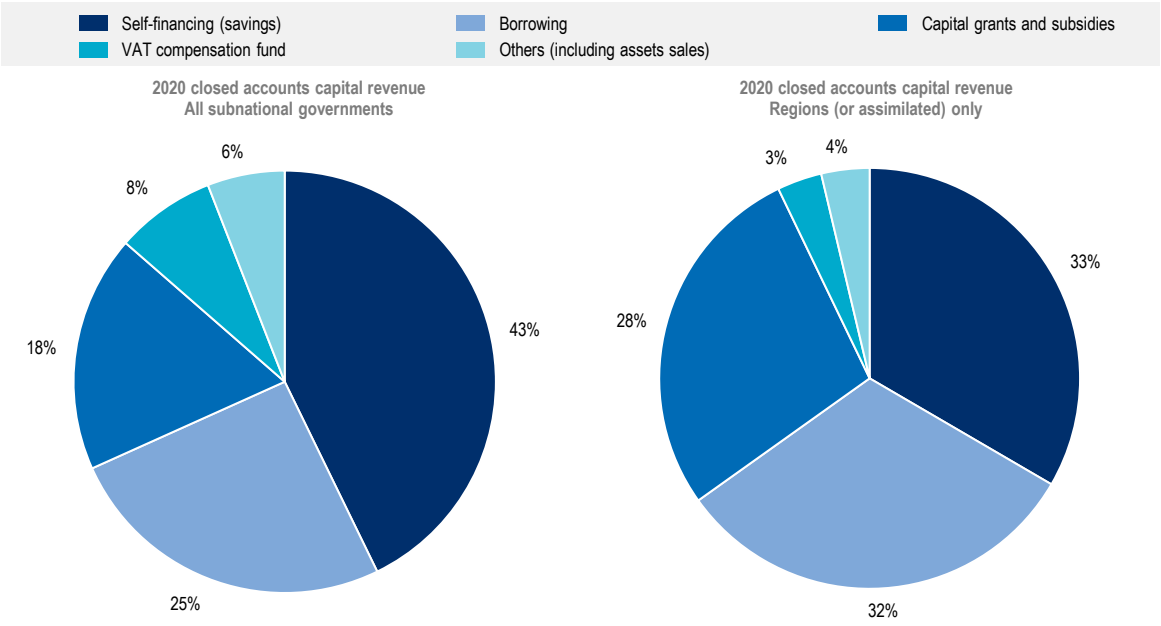
It should also be noted that the definition of "environmental tax" does not presume a real effect of this tax on consumer behaviour and on the environment. Thus, the car registration tax is an environmental tax but it has not been proven that it has a significant impact on purchasing behaviour.

Increasing external resources will be needed to finance the green transition

While the investment expenditure (excluding borrowing repayment) of French regions rose in 2020, their gross savings fell. This increase in investments can largely be attributed to regional economic support measures undertaken as part of the broader French stimulus response taken in the context of the COVID-19 crisis. At the same time, municipal investment decreased, due to both the crisis and the renewal of the deliberative assemblies following the 2020 municipal elections.

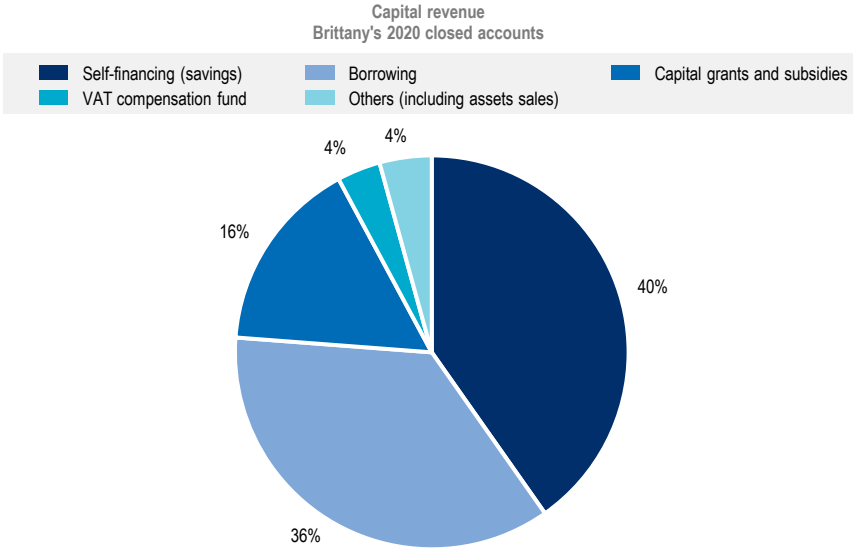
In 2020, 43% of subnational capital revenue was covered by self-financing (savings), 25% by borrowing, and 18% by capital grants and subsidies. The share of borrowing and capital grants is higher for regional governments than for all French subnational governments, amounting to 32% and 28% respectively (Figure 5.12 and Figure 5.13). Self-financing accounts for 40% of Brittany's capital revenues. Over the next few years, the pressure on self-financing is likely to persist, while regional investment needs are significant, particularly green investment needs. In its report "*Recovery: How to finance climate action*", I4CE argues that it is necessary for French local authorities to increase their investments in order to meet environmental and climate needs. The think tank estimates that there is an additional need of EUR 1.6 billion a year between 2020 and 2023 and EUR 3.9 billion a year between 2024 and 2028 (I4CE, 2020[22]).

Figure 5.12. Breakdown of capital revenue 2020



Source: OFGL (2021[18]), *Rapport d'activité 2021*, https://www.collectivites-locales.gouv.fr/files/Institution/1.%20organisation%20administraive/Organismes-consultatifs/OFGL/Rapport_activite_OFGL_2021.pdf.

Figure 5.13. Breakdown of investment income 2020, Brittany Region



Source: DGFiP-DGCL (2022[20]), *Finances locales - régions et CTU - comptes individuels des régions*, https://www.collectivites-locales.gouv.fr/finances-locales-regions-et-ctu.

Grants and subsidies contributing to the green transition represent a growing portion of subnational budgets in France

The French government's grants and subsidies contributing to the green transition are thought to have been growing over years,[7] yet there is no means of quantifying their precise share in subnational budgets.

Analysing the climate and environmental impact of the revenues of French subnational governments could shed some light in this regard.

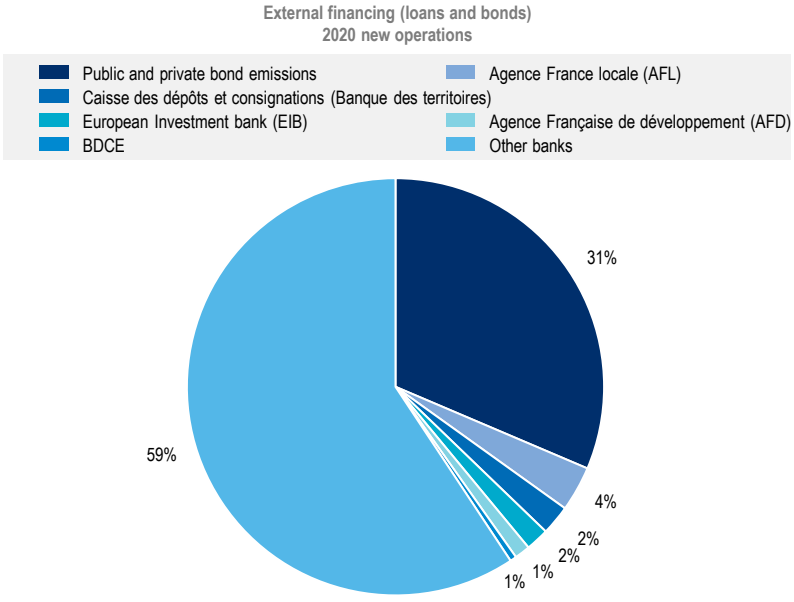
However, these revenues are fraught with challenges:

- The allocation criteria are sometimes complex and may significantly vary among the different types of funding; since grant and subsidy allocation requires monitoring, there is a need for more reporting, which leads to higher costs.
- Various subsidies and environmental allocations cannot always be added up.
- Fund allocation may bring about competition between subnational governments, while the rigid awarding criteria may adversely impact territorial innovation.
- Payment transfers often take a long time, thus forcing subnational governments to pre-finance projects.

Green loans and green bonds are more frequent

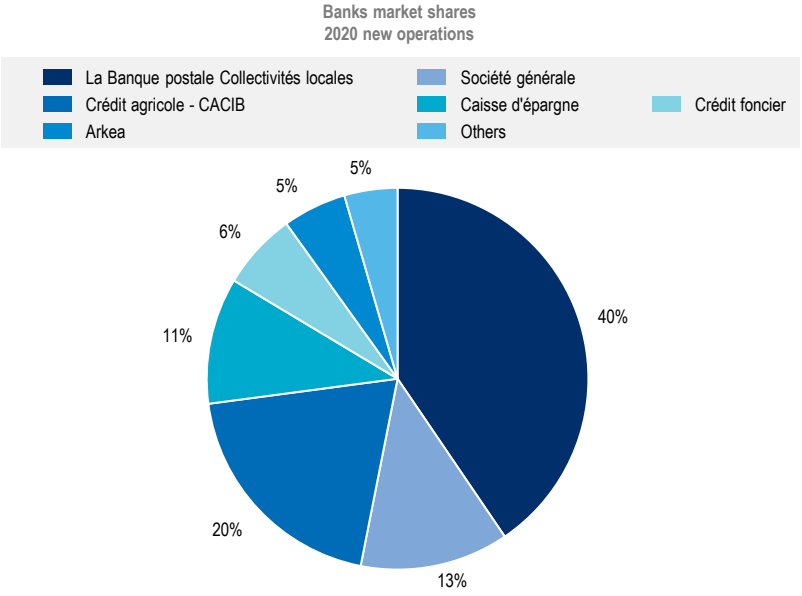
Even though there has been a significant increase in subnational bond issuances in France over the past two years, either directly (31% of new financing in 2020) or through L'Agence France Locale[8] (3.5%).

Figure 5.14. French subnational government external financing (loans and bonds) distribution in 2020



Note: BDCD= Council of Europe Development Bank.
Source: Finance Active (2021[23]) (2021), "Communiqué de presse Observatoire Finance Active 2021 de la dette des Collectivités Locales", https://financeactive.com/fr/presse/11-03-2021-communique-de-presse-observatoire-finance-active-2021-de-la-dette-des-collectivites-locales/.

Figure 5.15. Market share of bank lenders in 2020



Source: Finance Active (2021[23]) (2021), "Communiqué de presse Observatoire Finance Active 2021 de la dette des Collectivités Locales", https://financeactive.com/fr/presse/11-03-2021-communique-de-presse-observatoire-finance-active-2021-de-la-dette-des-collectivites-locales/.

French subnational government debt still relies to a large extent on bank intermediation (Figure 5.14). Public lenders (including *Banque des Territoires*) were responsible for a mere 5% of new operations (loans and bonds) in 2020. In the same year, *Banque Postale Collectivités Locales* held a market share slightly above 40% among banks, while foreign lenders were rarely found on the market (Figure 5.15).

To address the need to green their own balance sheets,[9] lenders are developing increasing numbers of green loans such as the *Banque des Territoires's* Green Recovery Loan, or the impact loans from the *Banque Postale Collectivités Locales* or from *Arkea*.

These loans are subject to conditionalities mainly regarding their purpose, which is generally large and therefore easily accessible to subnational governments, considering their competencies. For access to impact loans, on the other hand, subnational governments are required to prove the project's environment and climate impact which must be certified by an external auditor paid for by the bank.

Considering the extremely low interest rates, green loans do not have a lower cost than traditional financing, for French subnational governments.

The green bond market, in general, is developing at a modest pace. However, it faces several challenges:

- Although standards[10] are gradually being put in place, at the moment there is no international definition of green bonds, resulting in rather uneven requirements for such products.
- The existence of multiple types of environment and climate-related bonds[11] also impacts the volumes of each market segment and their liquidity.
- The implementation is complex and generates significant reporting needs, which involve additional costs. This limits the interest of subnational governments in this type of financing, especially since no green bonus–"greenium"–is apparently available for these issuances.

Most French subnational governments do not have enough financing needs to justify recourse to the bond market, yet the largest among them are either occasional or regular issuers.

These green finance products are not more attractive financially than traditional financing for the time being. In fact, they are somewhat less attractive, due to the additional requirements they are subject to. Nevertheless, they present a potential source of diversification for investors who are increasingly being subject to environmental reporting regulatory obligations[12] and therefore find green finance products appealing.

The global green bond market has grown dramatically in 2021. Annual green bond issuances reached USD 522.7 billion, a 75% increase on prior year volumes. This lifted the cumulative total to USD 1.6 trillion since the first green bond was issued. Globally subnational governments contributed 5% of total volumes in 2021 and were the only issuer type that experienced a decline in total issuances between 2020 and 2021.The sustainability-linked bonds market is another fast-growing segment. France is the leading green and sustainable bonds issuer globally, with significant contributions both from the national and subnational governments.

Subnational governments display growing interest in incorporating revenues into green budgeting practices

For the abovementioned reasons, it is uncommon for subnational governments to include revenues within the scope of their green budgeting practices. They are, however, interested in certain aspects of this approach, such as the environmental and climate impact analysis of revenue sources (environmental taxation, user charges and fees) and the mobilisation of green financing, either permanent (grants, subsidies) or temporary (debt).

This approach is interesting both for subnational governments (looking for additional resources) and for lenders and investors who have to prove that they are involved in the climate and environmental transition.

However, the need for subnational governments to expand their base of lenders and investors should take into account concerns about the “freedom” of the administration, whereby systematic earmarking of funds may render subnational governments more accountable to financiers than to electors, and financial concerns, whereby having accessing green finance generates excessive additional management costs (an important concern for subnational governments with limited capacity). Box 5.15 summarises the issues related to including revenues within the scope of a green budgeting practice.

Box 5.15. Summary: Growing interest in the environmental analysis of revenue

Brittany's first green budget does not include revenues within the project scope.

The region's operating revenues are mainly constituted by taxes, including "environmental" taxes but with little room for manoeuvre on the rates or tax base.

There is a growing need for external financing to finance future subnational climate and environmental investment projects.

There is an increase in funding directed towards green projects, either as allocations and subsidies or as long-term green financing (loans or bond emissions).

There is a necessity for lenders and investors to prove they are investing in green projects.

Challenges and constraints for green budgeting sustainability

Brittany's first climate budgetary assessment was successful with the scope and objectives of the project aligning with initial expectations and the work completed on schedule. The project teams highlighted several challenges, be they operational (tight deadlines, teams involved in this exercise in addition to their regular work) or methodological. The ultimate goal is for Brittany to now make green budgeting a long-term practice and to integrate it into its management tools. To achieve this, resources need to be allocated specifically to this project and a series of questions (outlined below) need to be thought through.

The main expectations of green budgeting have been analysed by the region

Brittany's green budgeting objectives are to:

- Improve the measurement of the impact of regional action on the climate and environment.
- Integrate environmental and climate concerns into budget decision-making procedures (e.g. when deciding on projects to subsidise) in a more systematic and targeted manner.
- Improve regional climate and environmental policies and practices and thus participate in achieving the regional and national objectives.
- Promote environment and climate action among all local stakeholders.

As a result, the region seeks to:

- Carry out an annual climate assessment of its provisional budgets, multi-year investment plans and closed accounts; this ensures result monitoring over time and consistency between forecasts and achievements.
- Integrate all the green axes (and not only the climate component) in the exercise.
- Integrate the necessary data for green budgeting into regional management and steering tools.
- Put in place procedures to ensure consistency between the budget and various regional environmental planning documents (SRADDET, Regional transition plan, etc.).
- Integrate revenues into the green budgeting approach to ensure that the region's revenues are consistent with its climate and environmental strategy, both in terms of quantity and quality.

The transition from pilot mode to a more long-term project mode requires a realistic and commonly agreed upon timeline

In Brittany, the pilot climate budgetary assessment took place in the first half of 2021, including project presentation and validation, definition of the methodology and necessary means, completion of an initial exercise on the 2020 administrative account.

Currently, Brittany is working to apply the methodology to the 2023 draft budget and to expand it to include teams from all regional government departments.

As part of this work, several different projects have been identified:

- Improve the expenditure description necessary for green budgeting.
- Complete the production of structuring hypotheses adapted to regional issues.
- Train all other regional government departments in environmental and climate issues and green budgeting benefits.
- Adapt internal IT tools to the process; while end-user computing tools served their purpose during the initial exercise, a solid computer system that allows for traceability of operations in real time is necessary for this exercise to turned into a long-term practice.
- Deepen the alignment of green budgeting with the region's other environmental tools and projects.
- Gradually involve external regional stakeholders in the process.

The transition from closed accounts to provisional budgets also entails methodological challenges that justify continuing the experiment into 2022: despite the fact that the nature of an action does not change between planning and implementation, its accounting granularity in the closed accounts is different from the one in the provisional budget. Hence, it is critically important to transpose the methodology into the provisional budget management tools. Future changes to budgetary and accounting regulations[13] are another key issue that must be accounted for to avoid costly repeated changes in management.

In the long term, expanding the scope of the green budgeting project to include all green domains, the alignment of green budgeting with the region's other environmental tools and procedures, and the process of ensuring consistency with the regional environmental planning documents (particularly the SRADDET and the Transition Action Plan), require updating over time. It seems to be a realistic expectation that a full electoral term is necessary to complete this work.

The costs associated with the integration of green budgeting into regional budgetary tools and processes should be proportional to the expected outcomes and the procedures should not be overly complex. Resource allocation for the project (human, technical and financial) must be reasonable, according to one of the principles in I4CE's methodology that insists on the "parsimony" of the process. Therefore, planning must be based on existing processes, procedures and tools, making sure that big changes are kept to a minimum.

The green budgeting methodology should be stable, yet scalable

One exercise is insufficient to resolve all methodological challenges associated with green budgeting. There are several methodological changes that will be need to be integrated over time:

- The region's green budgeting exercise is in fact a climate tagging of the budget. The transition from this climate budgeting to a green budgeting approach brings about new methodological challenges, hence the necessity for a gradual rollout.
- The competences of subnational governments evolve with time, which may require methodological adjustments to cover new competences.

- The structuring hypotheses are not static. The methodology must stay up to date with change environmental and climate science as well as technological progress, to ensure that the share of "undefined" expenditure decreases over time. Creating green budgets involves a follow-up system for subnational governments and their external partners (universities, think tanks, government bodies, etc.) to monitor scientific developments.
- Since green budgeting is also a tool for mobilising green finance, it is important that, where possible, green budgeting practices align with the reporting requirements of lenders and investors, particularly for products such as sustainability-linked-bonds, green bonds or green loans.
- Brittany's project team suggested that it would be useful to set up a group of climate assessment experts within the local authority, who would be present to support the implementation of the methodological changes, update the scientific references and ensure that the method is properly understood within the authority. Such a force would be an asset for the sustainability of the approach.

Internal and external validation of the entire process would guarantee its reliability

Within the Brittany Region, the Steering Committee was responsible for validating the project work.

Operating under the authority of the Head of Administration, the Audit Department seems to have the appropriate competences[14] to perform an internal evaluation. Thus, green budgeting could be integrated into the Audit Department's risk mapping and be subjected to occasional evaluation to make sure the system remains updated over time.

Since the stakes are high and the exercise needs to be made sustainable in the long term, it is crucial to formalise the internal validation methods and to set up a permanent arbitration body.

To support this approach, a formal documentation of the green budgeting practices and tools is essential; it will ensure the validity of retained hypotheses, help evaluate development needs when appropriate, and also secure the methodology's resilience over time and its correct implementation by the departments.

The region's project team has formalised the structuring hypotheses retained for its first exercise on the 2020 closed accounts, with the aim to meet the following imperatives:

- To trace the reasoning followed and justify the earmarking in order to be able to reproduce or modify them in the event of subsequent methodological changes;
- Preserve the assessment audit trail to implement it as part of long-term green budgeting practice.

Despite the fact that there are no plans for external validation at this stage, it remains a possibility for the future. Particularly considering the conditions that may be attached to future funding such as the EU funding or access to green bonds or loans.

All stakeholders must gradually be "embedded" in the exercise

The green budget is an element of Brittany's overall sustainable development strategy. Its efficiency relies on the involvement and support of local stakeholders.

To meet this goal, the region can rely on networks of experts, which can be internal or external, such as university researchers, think tanks (e.g. I4CE), or any institutions that fund research programmes. These experts can provide vital information about green budgeting practices, the evolution of environmental issues and the technological advances necessary to improve the regional practices.

Subnational governments must also involve their partners (i.e. local businesses, NGOs, the financial sector and citizens) in this exercise without arousing distrust by burdening them with excessively heavy requirements.

As a result, it was identified that there is a need for the region to pursue internal and external training and to communicate about its green budgeting work.

Communication to be implemented on the methodology and the results of the "green budget" must be established

Due to an absence of regulation in this regard, subnational governments are responsible for deciding on how and when they will communicate about their green budgeting exercises. They may choose to provide free access to information via open data platforms or to convey it in their financial report annexes or in their budget documents.

Since this exercise aims to improve internal practices and create an inclusive climate and environmental movement within a territory, green budgeting practices need to be transparent, especially the aspects related to the structuring hypotheses and how the environmental and climate impacts of expenditure and revenue are determined.

Since green budgeting does not only highlight achievements, but also negatives which local authorities may neither be responsible for or unable to change, it presents a serious political challenge for Brittany, even though political staff seems to be ready to take on this challenge.

References

DGFiP-DGCL (2022), *Finances locales - régions et CTU - comptes individuels des régions*, https://www.collectivites-locales.gouv.fr/finances-locales-regions-et-ctu. [20]

Direction Générale des Collectivités Territoriales (2021), *Rapport de l'Observatoire des finances et de la gestion publique locales - Les finances de collectivités locales en 2021*. [1]

EC (2021), *EU Taxonomy for Sustainable Activities*, European Commission, https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance/eu-taxonomy-sustainable-activities_en#regulation. [14]

EC (2014), *Short Guide to the Use of Rio Markers*, European Commission, https://europa.eu/capacity4dev/public-environment-climate/wiki/short-guide-use-rio-markers. [19]

EIT (2022), *EIT Climate-KIC: Innovation for Climate Action*, European Institute of Innovation & Technology, https://eit.europa.eu/our-communities/eit-climate-kic. [3]

Finance Active (2021), "Communiqué de presse Observatoire Finance Active 2021 de la dette des Collectivités Locales", https://financeactive.com/fr/presse/11-03-2021-communique-de-presse-observatoire-finance-active-2021-de-la-dette-des-collectivites-locales/. [23]

French Government (2021), *Rapport sur l'impact environnemental du budget de l'État, PLF 2022*, https://www.vie-publique.fr/sites/default/files/rapport/pdf/281883.pdf. [21]

I4CE (2020), *Évaluation climat des budgets des collectivités territoriales : guide méthodologique*, Institute for Climate Economics, Paris, https://www.i4ce.org/download/evaluation-climat-des-budgets-des-collectivites-territoriales-guide-methodologique. [2]

I4CE (2020), *Relance : comment financer l'action climat*, https://www.i4ce.org/download/relance-comment-financer-laction-climat/. [22]

IHEST (2021), *Vers une budgétisation verte en Bretagne : piloter la transition climatique et écologique*, Institut des hautes études pour la science, https://www.ihest.fr/wp-content/uploads/2021/06/IHEST-UT2020-synthese.pdf. [10]

IPCC (2014), *5th Climate Change Report, 2014 - Annex 2*, Intergovernmental Panel on Climate Change, https://www.ipcc.ch/site/assets/uploads/2018/05/SYR_AR5_FINAL_full_wcover.pdf. [24]

La Région Occitanie (2021), *Budget Primitif 2022*. [16]

La Région Occitanie (2020), *Rapport de présentation du Budget Primitif 2021*, La Région Occitanie. [8]

Ministère des finances (2020), *Direction du Budget- Annexe 2 - Budgétisation verte*. [17]

Nature 2050 (2021), "La Région Grand Est choisit CDC Biodiversité et la Banque Des Territoires pour l'accompagner dans ses demarches en faveur de la biodiversité", https://www.nature2050.com/evenements/la-region-grand-est-choisit-cdc-biodiversite-et-la-banque-des-territoires-pour-laccompagner-dans-ses-demarches-en-faveur-de-la-biodiversite/ (accessed on 23 April 2021). [9]

OFGL (2021), *Rapport d'activité 2021*, Observatoire des finances et de la gestion publique locale, https://www.collectivites-locales.gouv.fr/files/Institution/1.%20organisation%20administraive/Organismes-consultatifs/OFGL/Rapport_activite_OFGL_2021.pdf. [18]

Région Bretagne (2021), *July 2021 Steering Committee Meeting*. [7]

Région Bretagne (2021), *Rapport Financier 2020*, https://www.bretagne.bzh/ressources/budget-finances/rapports-financiers-dactivites/ (accessed on 4 May 2022). [12]

Région Bretagne (2020), *Brittany's 2020 Financial Report*. [13]

Région Bretagne (2019), *L'organigramme des services de la Région Bretagne*, https://www.bretagne.bzh/app/uploads/organigramme_region_avec_services_decembre_2019.pdf. [11]

Région Bretagne (2019), *Schéma régional d'aménagement, de développement durable et d'égalité des territoires*, Région Bretagne, Brest, https://www.breizhcop.bzhwp-content/uploads/2019/12/projet-de-SRADDET.pdf. [5]

Région Bretagne (2018), *Bienvenue dans la Breiz Cop : un monde à vivre*, https://www.breizhcop.bzh/. [4]

Région Bretagne (2018), *Les 38 objectifs de la Breicop*, https://www.breizhcop.bzh/wp-content/uploads/2018/12/38-objectifs-Breizhcop.pdf. [6]

Région Grand Est (2021), *Grand Est Budget 2022*, https://www.grandest.fr/wp-content/uploads/2022/01/grand-est22-budget-2022-papok.pdf (accessed on 8 April 2022). [15]

Notes

[1] The following case study was finalised in early 2022 and mainly analyses the steps already taken by the regional government prior to January 2022. However, the green budgeting project is still ongoing, including work on how to extend the practice to draft documents (provisional budget) and how to link it to the regional climate strategy.

[2] In France, approx. 18 377 municipalities have less than 500 inhabitants and 29 976 municipalities have fewer than 2 000 inhabitants.

[3] These are actual transactions of the Region; accounting movements without receipts or disbursements (such as amortisations), or duplicates (such as internal re-invoicing) are not taken into consideration.

[4] The IPCC defines adaptation as "the process of adjustment to actual or expected climate and its effects. In human systems, adaptation seeks to moderate or avoid harm or exploit beneficial opportunities. In some natural systems, human intervention may facilitate adjustment to expected climate and its effects"

[5] Example: additional information on the terms of use for a grant paid to a high school.

[6] This is also the position advocated by I4CE and by most local authorities practicing green budgeting in France.

[7] The national government has set a target that 35% of projects financed by its two main investment support allocations must contribute to the green transition (in 2019 the share was finally limited to 25%).

[8] L'Agence France Locale (AFL) is a public development bank created in 2013, fully owned by French local authorities and issuing debt securities for them. The proceeds of the issues are redistributed to its member in the form of traditional bank loans.

[9] Banks are increasingly attentive to the financial risks associated with environmental issues (such as loss of value of assets subject to climate hazards, or deterioration in the solvency of borrowers due to their polluting activities) and the image risks linked to the financing of polluting companies and activities. The regulations imposed on the banking sector are still limited but are progressing, and the development of taxonomies should contribute to a growing demand for transparency from financial players.

[10] The EU developed a standardised classification that enables the sustainability assessment of 70 economic activities, which represent more than 90% of greenhouse gas emissions in their jurisdiction. This taxonomy is intended to direct funding towards carbon-reducing activities, allowing investors to determine the "green" share of their portfolios and businesses to demonstrate the extent to which they support climate transition.

[11] ESG (environmental, social, and governance), green bonds, climate bonds and transition bonds, to which sustainability bonds have recently been added. While they do not finance specific projects, the latter are used to verify the link between financial conditions and environmental objectives.

[12] The French law on energy transition for green growth of 2015 increased transparency obligations for investors (including institutional), based on criteria reinforcing compliance with environmental, social, and quality objectives of governance (ESG) in their investment strategies. This law entails more information on climate risks and the means implemented to contribute to the energy and ecological transition. These reporting requirements have been reinforced by the energy-climate law of November 2019, whose text inspired the European Union Commission's "disclosure" regulation (2019). This regulation imposes new

reporting conditions on investors, particularly on the possible negative impacts and the characteristics of the financial products that they present as sustainable.

[13] Updated budgeting and accounting instructions for French subnational governments are expected to be released in 2024.

[14] The Audit Department's mission is to provide the Region with assurance regarding the degree of control of its operations and the functioning of its management and control systems on regional and European funds.

6 Venice case study

The city of Venice, Italy is working towards further integrating climate and environment considerations into its budget. Though not currently engaged in a green budgeting practice, the municipality has shown interest in developing new budgeting practices and increasing links between climate and environmental science, indicators, and the budgetary decision-making processes. However, there are some considerable challenges faced by the municipality due to its unique climate change vulnerabilities and financial constraints. Any green budgeting approach must therefore be closely linked with other ongoing regional and national climate initiatives that the municipality is a part of, to enhance synergies and avoid creating additional human and financial resource burdens.

Introduction

In recent decades, several initiatives to integrate climate and environmental considerations into budgetary decision-making have emerged at national, regional, and local levels, taking into account country specificities and environmental objectives and commitments. The OECD has been engaged in the development and dissemination of several of these initiatives.

These initiatives can be referred to as "green budgeting" based on a broad definition of the term put forward by the Paris Collaborative on Green Budgeting (PCGB):[1] "[…] using the tools of budgetary policy making to provide policy makers with a clearer understanding of the environmental and climate impacts of budgeting choices, while bringing evidence together in a systematic and co-ordinated manner for more informed decision making to fulfil national and international commitments" (OECD, 2021[1]).

Italy is a pioneer in Europe in terms of national-level green budgeting practices dating back to the late 1990s. In Italy, green budgeting tools have been based on environmental accounting methodologies and have evolved over time to be better adapted to the national environmental strategy. At the regional and local levels, green budgeting experiences were also carried out in the early 2000s with the development of the City and Local Environmental Accounting and Reporting (CLEAR) method (see Chapter 3). The 2006 report *Bilancio ambientale del Comune di Venezia* (Environmental Reporting of the City of Venice), developed by the Italian environmental agency (APAT, now called ISPRA), is another example of an early green budgeting experience and led in 2009 to the definition of a national environmental accounting and reporting methodology for Italian municipalities.

Despite active participation early on from numerous Italian subnational governments, environmental budgeting practices are now limited to only a handful of these subnational governments. Some of these remaining practices are centred on the use of physical environmental indicators to measure the environmental impact of the administration's actions. Others try to measure financial commitments favourable to environment; however, most of them do not estimate environmentally harmful commitments within their budgets and the application of green budgeting principles, as defined by the Paris Collaborative on Green Budgeting, remains to be developed among regional and local governments in Italy.

The municipality of Venice is deeply committed to environmental protection and has joined numerous initiatives to this effect over the two last decades. The municipality has shown interest in implementing green budgeting practices to increase links between environmental and climate scientific knowledge, indicators, and municipal budgetary decision-making processes. The stocktake of existing subnational green budgeting practices presented in Chapter 3, as well as the accompanying self-assessment tool, can serve as a resource for Venice to develop its own green budgeting methodology and practice.

This case study aims to highlight the various green budgeting initiatives previously undertaken in Italy and Venice, and to analyse the possibilities for the development of green budgeting practices within the municipality.

Italy has had a long-standing interest for green budgeting at national and local levels

Green budgeting practices have been developed in Italy beginning in the early 2000s. At the national government level, green budgeting encompasses the production of three main documents: the *ecobilancio dello Stato* (Ministry of Economy and Finance, 2022[2]) based on draft budgets (hereafter called the eco budget or *ecobilancio*), the *ecorendiconto dello Stato* (Ministry of Economy and Finance, 2021[3]) based on closed accounts (hereafter called the eco report or *ecorendiconto*) and the *Catalogo dei sussidi ambientalmente dannosi e dei sussidi ambientalmente favorevoli* (Catalogue of Environmentally Friendly Subsidies and Environmentally Harmful Subsidies, hereafter called the catalogue).

Green budgeting practices have also been launched at the regional and municipal levels during the past two decades and have led to the development of a methodology designed for Italian municipalities, presented in more detail below. However, there are few examples of comprehensive green budgeting practices, based on the Paris Collaborative on Green Budgeting's framework, exist at subnational level.

Environmental commitments and subsidies are measured at national level

Eco-budgets have been developed since the early 2000s at the national level

Italy has a long practice of eco-budgeting. In 1999, Parliament instructed the government to undertake an experimental environmental accounting approach and to highlight all environmentally-related resource (budget) allocations for the 1999 budget and for the three-year period between 1999 and 2001 (Ministry of Economy and Finance, 2016[4]). The scope of the exercise was large and defined "environmentally related resource allocations" as all resources used for environmental protection purposes, including protection, conservation, restoration and sustainable use of resources and natural heritage.

The exercise has continued since 2000 and the results are presented annually in an eco-budget (*ecobilancio*) which is an appendix to the central government budget. The government published its latest *ecobilancio* in 2021, which covers the planned environmental expenditure for the financial years 2021-23.

In 2008, an eco-report (*ecorendiconto*) detailing the executed central government environmental protection expenditure for the year 2007 was added to the *ecobilancio*. This *ecorendiconto* practice has been institutionalised by the Public Finance Accounting Reform Law of 31 December 2009 (Camera dei deputati, 2009[5]), which requires the State General Accounts to include an appendix presenting the results of all expenses related to programmes having an environmental nature or content. The first *ecorendiconto* resulting from the 2009 law was released in reference to the final balance of the 2010 financial year. The latest *ecorendiconto* presents the 2020 results.

The 2009 law insisted on the fact that the findings should be represented "in accordance with the relevant European Union (EU) guidelines and regulations" (Italian Parliament, 2009[6]). Both the *ecobilancio* and the *ecorendiconto* are thus based on the European System for the Collection of Economic Information on the Environment (commonly referred to as SERIEE from the French acronym).[2] This system identifies two types of expenditures: those relative to environmental protection, classified according to the CEPA (Classification of Environmental Protection Activities); and those relative to the use and management of natural resources, classified according to CRUMA (Classification of Resource Use and Management Activities) (Box 6.1).

The *ecobilancio* and *ecorendiconto*, together referred to as the environmental budgets, are presented by missions (34 missions for the 2020 budget including public infrastructure, justice, etc.) and programmes (103 programmes for the entire 2020 budget), to be consistent with the functional approach of the central government budget. Each programme is assigned to a responsibility centre.

Box 6.1. CRUMA and CEPA classifications

Environmental accounting was developed in the 1990s as a field of international statistics. The purpose of environmental accounting is to physically measure and evaluate the evolution of the natural environment and of the impact of human activities on it, but also to estimate and provide a monetary accounting vision of the financial flows related to natural resource use and the effects of human interaction with the environment.

Different environmental accounting approaches have been developed to complement traditional accounting systems, to construct separate environmental financial statements, or to produce environmental physical indicators describing the state of the environment and damages resulting from human activities.

In Europe, environmental accounting practices were developed mainly for statistical purposes. Eurostat's SERIEE system (Système européen pour le rassemblement des informations économiques sur l'Environnement — European system for the collection of economic information on the environment) sets out a framework for a monetary description of environmental protection activities. SERIEE is based on the:

- European Classification of Environmental Protection Activities (CEPA) which covers seven main areas and two transversal activities: ambient air and climate protection, wastewater management, waste management, protection and remediation of soils, groundwater and surface water, noise and vibration abatement, protection of biodiversity and landscapes, protection against radiation, research and development, environmental protection and other environmental protection activities.
- And the Classification of Resource Use and Management Activities and expenditure (CRUMA) to cover expenditure linked to the management of natural resources in the following fields: water, forest resources, flora and fauna, fossil energy, raw materials, research and development, others (administration, training, information, etc.).

For each reference year and environmental sector of CEPA and CRUMA classifications, the SERIEE system then produces accounting tables describing the supply of environmental services and the way they are produced, the uses of environmental services (by categories of users), the transfers redistributing the environmental expenditures among the different institutional sectors.

Source: Eurostat (1994[7]) (1994), *SERIEE European System for the Collection of Economic Information on the Environment*, https://ec.europa.eu/eurostat/documents/3859598/5859717/KS-BE-02-002-EN.PDF.pdf/468a0ed9-bdf2-4772-aa21-e04ed45c2f74?t=1414780447000 (accessed on 1 May 2022).

The central government's eco-budget methodology has been disseminated across the administration

The Italian Ministry of Finance has developed methodological and technical instructions to guide other ministries on how to prepare and provide the necessary information on environmental expenses related to their portfolios. The analysis is carried out at the programme level. Each programme is attributed to an administrative responsibility centre and divided into actions in order to give more information on the related activities.

The entirety of the budget is screened to detect environmental expenses, whether the budgetary item has an explicit environmental purpose or not. The environmental finality of any expense is determined using Table 6.1.

For each programme, current expenditure is initially classified as "uncertain" if not related to a specific environmental programme while capital expenses are classified according to the above table. Then, each programme's current expenditure is reviewed and attributed to a classification broadly similar to that of the attached capital expenditure. At this stage, most current expenditure can be classified, with the exception of transfer programmes for which the administration does not have sufficient information on the final purpose of the expense.

This methodology does not measure expenditures with a negative impact on the environment but it can be used, in a further step, to adopt a consistent system of parameters and indicators for measuring the results of environmental policies and not just reporting expenses planned or incurred.

Table 6.1. Central government *ecobilancio* methodology for the detection of environmental expenses, multi-scope

Non-environmental expenses Management plans that surely contain exclusively non-environmental expenses	
At least partly environmental expenses. Management plans that contain environmental expenses aggregated with other expenses (non-environmental and/or for uncertain purposes)	Uncertain purpose expenses. Management plans for which, given the information available, it is not possible to understand whether the expenses are attributable to the area of environmental protection, nor to understand if they are entirely excluded from it
Environmental expenses	
Exclusively environmental expenses. Management plans that only include environmental expenses	Partly environmental expenses. Management plans that only include both environmental expenses and other finality expenses

Source: Ministry of Economy and Finance (2011[8]), *Allegato 1*.

The State 2020 ecorendiconto highlighted EUR 4.7 billion of environmental expenditure

The 2021 State government *ecobilancio* is broken down by environmental objectives and by type of expenditure. Planned environmental expenditure for 2021 is roughly EUR 6 billion (EUR 4.7 billion in 2022 and EUR 4.9 billion in 2023). Three-quarters of this expenditure is capital expenditure (mainly transfers) and only EUR 1.4 billion is current expenditure. About half of this EUR 6 billion in planned expenditure concerns soil and water protection management as well as research and development (30% and 19% respectively). The air and climate category ranks third accounting for less than 12% of the total planned expenditure (Ministry of Economy and Finance, 2020[9]).

The *ecorendiconto*, which reports the environmental expenditure of the closed accounts, also details the allocations by the ministry and by environmental objective. In 2020, executed environmental expenditure amounted to EUR 4.7 billion (Ministry of Economy and Finance, 2021[3]).

The state also produces a catalogue of environmentally friendly and harmful subsidies

In 2017, Italy adopted its National Sustainable Development Strategy, in accordance with the 2030 United Nations (UN) Sustainable Development Goals (SDG). To support its strategy, the government publishes a catalogue of environmentally friendly and harmful subsidies and a report on the state of natural capital.

The catalogue is legally mandated via the December 2015 law no. 221 disposition (Camera dei deputati, 2015[10]), which tasked the Ministry of Environment, Land & Sea to produce a Catalogue of Environmentally Friendly Subsidies (EFS) and Environmentally Harmful Subsidies (EHS). The purpose of this catalogue is to support the Parliament and the government in the development of environmental policies compliant with national, European and international recommendations and to provide policy-makers with information they can act upon to gradually remove environmentally harmful subsidies and strengthen favourable ones.

Both direct subsidies (resulting from spending laws) and indirect subsidies (tax expenditures) are examined in the catalogue. The catalogue relies on a broad definition of subsidies as “incentives, benefits, subsidised loans, and exemptions from taxes directly related to environmental protection (Camera dei deputati, 2015[10])”, which aligns with the OECD definition of a subsidy (OECD, 2013[11]).[3] Subsidies are classified

by economic sectors: agriculture, energy, transport, VAT and other subsidies. For its third edition, released in 2019, the catalogue also tracked specific subsidies with uncertain net environmental effect isolated in the category “uncertain”.

The impact and price of subsidies included in the Catalogue are quantified using several different methodologies (such as price gap and social marginal cost) detailed, mainly developed by the OECD and the European Commission.[4]

The last catalogue was released in December 2019 using 2018 data. It estimated favourable subsidies to amount to EUR 15.3 billion and unfavourable subsidies to amount to EUR 19.7 billion (fossil fuel subsidies represent nearly 90% of the total amount) (Ministry of Ecological Transition, 2022[12]). Another EUR 8.7 billion in subsidies were labelled as having an uncertain effect. The 2019 results are not comparable to those from previous catalogues due to changes in the scope of subsidies analysed as well as a partially revised methodology. As the Catalogue is produced by the Ministry of Environment, it is not attached to budgetary documents.

The report on the state of natural capital (Ministry of Ecological Transition, 2018[13]) presents the state of conservation of water, soil, air, biodiversity and ecosystems through biophysical evaluation. It underlines the fact that Italy’s significant natural capital value has not yet been fully taken into account in other national accounting and statistical systems. In addition, threats and steps to be taken to improve the assessment of the effects of public policies on natural capital are also identified in the report.

Subnational green budgeting practices are still relatively underdeveloped

Green budgeting presents several opportunities for subnational governments. Initiating a green budgeting approach can align financial decisions with environmental and climate goals. Green budgeting also helps governments prioritise low-carbon and resilient investment projects and spending. Green budgeting tools can also assist subnational governments to mobilise additional sources of public and private finance to bridge funding gaps and help respond to a growing demand for transparency and accountability on subnational government public action.

No comprehensive experience of green budgeting adhering to all four building blocks of the OECD Green Budgeting Framework (Chapter 2) has been identified so far among Italian subnational governments, despite several promising experiments that took place in the early 2000s.

At the beginning of the 2000s, a subnational environmental accounting and reporting methodology was developed in Italy

In the early 2000s, the European Commission launched several studies on the opportunity to design and enforce environmental accounting and reporting systems at the local level. The City and Local Environmental Accounting and Reporting (CLEAR) methodology was developed in this context through a project co-financed by the European Commission as part of the LIFE-Environment programme.[5]

The CLEAR methodology was developed between 2001 and 2003 with the support of 18 Italian municipalities and provinces,[6] the region of Emilia-Romagna and the OECD (which carried out monitoring and comparison with similar experiments carried out elsewhere). These subnational governments were chosen because of their variety in terms of location, population and specificities.

The project scope was to design a single instrument – the environmental budget – that would allow local governments to visualize and measure all of their policies and commitments with an environmental impact using both physical and monetary indicators. This environmental budget would serve as a decision-making tool for local officials. It would follow the same approval process as the financial budget and be closely linked to it. To ensure national and international comparability of practices, the methodology for classifying

environmental policies and expenditure was based on the European SERIEE system and adapted to the specificities of the local authorities implementing it.

Among the municipalities and provinces that participated in the CLEAR project, only three (Bergeggi in 2022, Varese Ligure in 2019, and Reggio Emillia in 2018) have recently published documentation showing that they are still continuing with the methodology in some form, and these documents mainly included environmental physical indicators. In some cases, a link is created with local environmental policies and objectives, but no example was found of a link with the corresponding financial budgets.

Only a few Italian subnational governments publish estimations of budgetary environmental expenditures

In 2020, the Italian region of Sardinia constructed an eco-budget inspired by the national government's *ecobilancio*. The region screened its own budget expenses relating to programmes having an environmental nature or content, defined as the resources used for the purpose of environmental protection, conservation, restoration and sustainable use of resources and natural heritage. To define and classify environmental expenses, the region used SERIEE and the CEPA and CRUMA classifications. Primary expenditures (all expenditures excluding financial expenses) have been analysed to determine the share attributed to environmental preservation and natural resource use. Like the CLEAR methodology, unfavourable expenditure is not included in the screening.

The regional *ecobilancio* presents the resources by function, by department and by nature of expenses. It showed that in 2020, EUR 705 million, out of a total regional budget of EUR 8.5 billion, was allocated to environmental protection and natural resource use and management. Water use and management, and forest use and management, each represented one-third of these expenses, while soil, ground and surface water protection and remediation accounted for 16% (Regione autonoma de Sardegna, 2020[14]).

The region also identified the government departments with the most environmental protection and natural resource use and management expenditure; the Departments of Environment, Public Works and Industry accounted for, respectively, 42%, 29% and 11% of the total identified expenditures (Regione autonoma de Sardegna, 2020[14]).

Box 6.2. Synthesis: A long-standing interest for environmental accounting and reporting practices

The Italian central government, as well as local and regional authorities, have been interested in environmental accounting and reporting methodologies since the late 1990s. These reflections and the Italian regulatory context have led the State to produce estimates of its environmental expenditure both for draft budgets and closed accounts. In recent years, subsidies have also been analysed to identify those that are favourable or harmful to the environment.

An important reflection was also carried out at municipal level to define a methodology that would help to develop tools linking the environmental objectives of a territory, its environmental policies (adopted within the various programmatic documents), the budgeted expenditure and finally, and eco-efficiency indicators (indicators that measure the environmental outcome achieved based on the level of resources used). The City and Local Environmental Accounting and Reporting (CLEAR) methodology is not widely used by the group of municipalities that were part of the initial project. Some of the municipalities at the origin of the experiment nonetheless still produce environmental reports (*bilanci ambientali*), but these documents focus on physical indicators related to the environment without making the link with the fiscal policy of the local authority.

Subject to strong environmental and climate pressures, the city of Venice is at the centre of many initiatives

Venice is committed to a national and regional strategy for sustainable development

Venice, with its very large territory and its unique ecosystem, is particularly concerned by global warming, sea-level rise, and other consequences of climate change. Considering the "water town" status of the historical city centre, Venice also has to respect specific regulations in terms of urban planning, environment, transport, and river and sea traffic and ports. Moreover, despite a decreasing and limited number of inhabitants, the city centre is a global tourist destination which places major environmental pressures on the city.

Venice's special status creates specific environmental challenges

The city of Venice has a population of approximately 255,000 inhabitants across all six districts of the city: Chirignago Zelarino, Favaro Veneto, Lido Pellestrina, Marghera, Mestre Carpenedo, Venezia Murano Burano. This territory thus includes islands, mainland, urbanised and rural areas. With economic activity mostly driven by the tourism industry, the municipality's environmental challenges are huge and magnified its unique natural and cultural attributes (Venice has been registered as UNESCO world heritage site since 1987) and vulnerabilities (the city was close to being listed as a world heritage site in danger in 2021).[7] The municipality's territory also includes a commercial port, an international airport, and industrial areas. This diversity adds to the environmental and climate challenges the city faces.

Most of these environmental challenges, however, clearly exceed the municipal geographical perimeter – the ecosystem of the Venetian lagoon is shared by four provinces and over 100 local authorities and the responsibility for its preservation rests with the metropolitan area – but also its financial surface and its population contribution capacity. Many local projects thus have regional and even national dimensions. An example of this is the Mose project (*MOdulo Sperimentale Elettromeccanico*), an electromechanical experimental module which aims to isolate the Venetian lagoon from the Adriatic Sea during high tides and protect Venice from floods (*acqua alta*). Initiated in 2003 and operational in 2020, the project was conducted under the supervision of the Italian Ministry of Infrastructure and Transport in co-operation with the public company Venice Water Authority (now the Interregional Superintendence of Public Works).

Another relevant example is the Porto Marghera reconversion project to redevelop the large industrial wasteland at the entrance of the Venice lagoon. The project, which was launched in 2014 and is still under development, includes, among other initiatives, the creation of an alternative energy production centre. This project is part of a larger development plan, called "Venice, World Capital of Sustainability" (*Venezia Capitale Mondiale della Sostenibilità*), supported by the national government and promoted by the region of Veneto (Regione de Veneto, 2021[15]). This initiative brings together the municipality, cultural and academic institutions (*Ca' Foscari* and the IUAV Universities of Venice, the "*Benedetto Marcello*" State Conservatory of Music, the Academy of Fine Arts, the Cini Foundation), companies and associations (*Confindustria Veneto*, regional industrial companies, Generali, and the Boston Consulting Group).

The protagonists of the project are committed to developing a shared and integrated action with impacts and positive effects for the whole Veneto region in terms of sustainable development, job creation, improvement of the living and working conditions of the population, and industrial and energy transition. The project's main areas of action are: energy transition and environmental sustainability, education, evolution towards a sustainable tourism model, and a plan for trade and countering of illegal activities. Beyond the re-structuration of the industrial zone of *Marghera*, the project includes urban renovation programmes and Venice artistic and cultural heritage promotion. The purpose is also to position the municipality as a point of reference or best practice for solving environmental, social, governance, and

sustainability problems. Through this sustainability project, the municipality also hopes to access new investment funds and a larger share of the European recovery funds allocated to Italy.

Though the municipality has significant funding needs to launch new projects, it is also clear that a large part of the environmentally-related projects, though institutionally or regulatory supported by the municipality, are conducted by local partners, such as utilities, or even regional or national institutions. The municipality also collaborate with private investors for some of its projects; for instance, as part of the *Marghera* port development project and the Mestre railway station project, investors received construction rights that came with "public good" conditionalities such as the expansion of a city park (*Piraghetto parco*) by approximately two hectares or the expansion of via Ulloa by approximately three hectares or the construction of parking lots and public transport facilities.

Those various projects consequently do not appear in the city budgets, or as current expenditure or capital expenses. This reinforces the fact that any green budgeting practice is one of several tools available to municipalities to implement their sustainable development policies and improve the coherency of municipal action in this regard.

Venice is a member of several initiatives to share and improve environmental and climate-related projects and actions

Since 2011, Venice has been a member of the Covenant of Mayors, a European movement for local climate and energy action. Covenant of Mayors members commit to:

- Setting mid and long-term targets, consistent with the EU objectives, and at least as ambitious as national targets and with ultimate target to achieve climate neutrality by 2050.
- Engage citizens, businesses and governments at all levels in the implementation of this vision and in the transformation of local social and economic systems.
- Act to get on track and accelerate the transition which implies developing action plans on how to mitigate and adapt to climate change though remaining inclusive.
- Create networks with mayors in Europe and beyond.

Between 2014 and 2021, the municipality was also a member of the C40 Cities Climate Leadership group. Although they are no longer a member of the Climate Leadership group, the municipality remains an active member of the broader C40 Network. C40 is an international network of large cities committed to addressing climate change. It supports city collaboration, helps to share knowledge, and drives action on climate change in order to reach Paris Agreement goals at the local level. C40 has nearly 100 members representing about 800 million inhabitants globally; Venice is the smallest member in terms of population.

Venice's green objectives are followed-up within its programmatic documentation

Since 2012, Venice has had a validated Sustainable Energy Action Plan (SEAP), a requirement of its membership in the Covenant of Mayors. This plan is based on a baseline greenhouse gas (GHG) inventory, conducted according to the Covenant of Mayors' guidelines and the European Joint Research Centre indications.[8] The inventory includes municipal buildings and facilities, building equipment facilities of the tertiary sector, residential buildings, public lighting, municipal vehicle fleet, public transport and private and commercial transport but excluded electricity production, industry, agriculture and waste. Within the SEAP, the greenhouse gas inventory is linked to a list of precise actions with an overall objective of reducing Venice's GHG emissions by 20% in 2020 (compared to 2005 levels). Each action in the SEAP lists the objectives, benefits, costs and financing, and the GHG reductions related to each action, A follow-up inventory was done in 2018, which showed that the municipality had achieved its 20% emissions reduction target ahead of schedule.

The Sustainable Energy Action Plan (SEAP) was not stopped: the actions that are not yet concluded still continue and Venice is currently preparing a new Sustainable Energy and Climate Action Plan[9] (SECAP) for 2022 with a new intermediate GHG reduction target for 2030 (more than 40% decrease) and a carbon neutrality objective for 2050 in accordance with the Paris Agreement targets. The GHG inventories are also being updated to include more sectors and improve the measurement of existing ones according to C40 recommendations.

Similarly, the municipality is also developing other concrete climate adaptation and mitigation actions. These include political support and commitments (i.e. a commitment to C40 to prepare Venice's first climate adaptation plan), as well as the allocation of human resources (a Director for Strategic and Environmental Projects was appointed, a new municipal department dedicated to the environment was created as well as an environmental observatory). The municipality has also identified scientific support and other potential supports both at national and European levels. Green budgeting clearly enters in these dynamics; however, to have the greatest success it must be linked with all the current initiatives of the municipality to enhance synergies between them and avoid creating additional human and financial resource burdens.

Venice's 2006 bilancio ambientale

In 2006, the national environmental agency, then called APAT but currently called ISPRA,[10] chose the city of Venice as a case study for the development of an environmental budgeting methodology. With the support of the municipality, the agency developed a "*bilancio ambientale*" based on the CLEAR methodology and using municipal environmental and financial data from the year 2004.

The purpose of the project was to experiment with creating a methodology to quantify the costs and benefits of municipal environmental management policies, the first step towards the development of an environmental budgeting process to be used by all Italian local authorities. The scope of the project was to create a framework for a tool that assisted subnational governments to collect long-term information and analyse trends related to environmental expenditure. Overall, the tool would help to assess whether the amount of environmental expenditure allocated by a municipality is adapted to the scale of the environmental problems a municipality is facing and if the resource allocation could be improved. Guidelines for developing a *bilancio ambientale* were published by APAT in 2009.

Constructing a bilancio ambientale requires a step-by-step approach

The APAT project aimed to construct rigorous reporting and assessment tools in order to measure both the use of environmental resources and the environmental impact of public policies. The tool was not intended to measure all legal and regulatory activities of the municipality, although it was quite comprehensive, but instead to provide more transparency on the type and efficiency of its public policies and the nature of its expenditures.

The *bilancio ambientale* methodology proposed by APAT consisted of several steps (Figure 6.1).

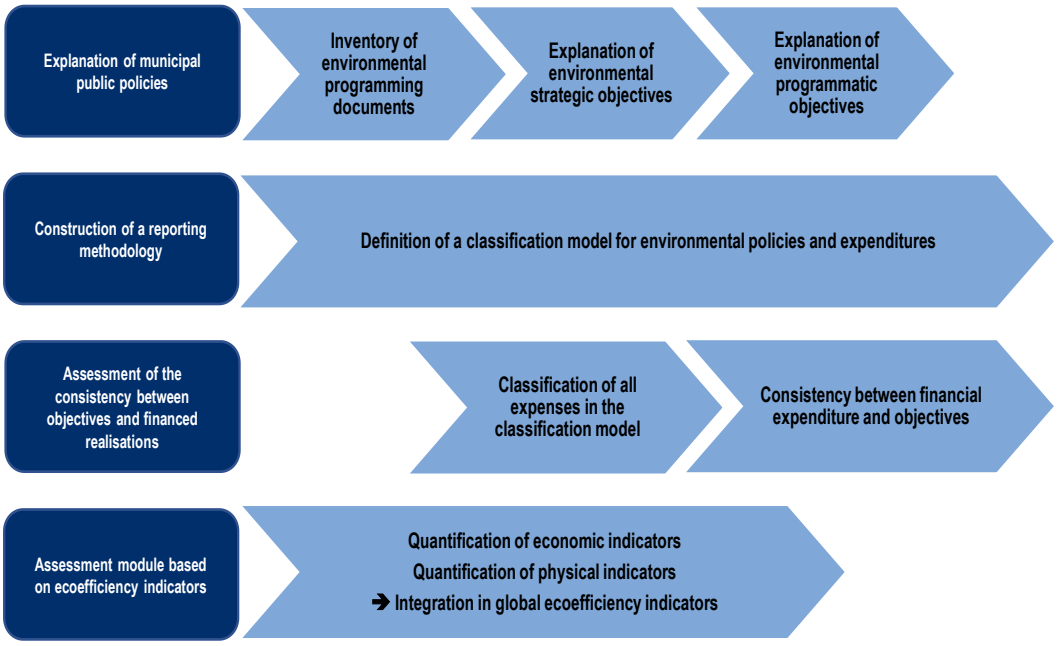
The first step was the identification and analysis of all the environmental policies defined and formalised in a municipal administration's programmatic documents. Environmental policies are all those policies that have a direct or indirect impact on the environment. Examples of administrative programmatic documentation include a work programme for the Department of the Environment or a Planning Forecast Report for a given period.

Simultaneously, a system for classifying the environmental policies identified in the programmatic documentation, and their associated expenditure allocations, was constructed. A broad definition of environment was retained, including prevention, mitigation and restoration actions but also sustainable urban development interventions. Both direct and indirect expenditures were considered. APAT was careful to make a direct link between financial data, environmental indicators, and environmental policy

objectives. The resulting classification system had two levels that encompassed both the municipality's legal competences and programmatic priorities: ten broad first-level categories of classification (e.g. waste) and 44 second-level categories (e.g. waste management, urban and environmental hygiene, etc.).

- Example of a first-level classification: waste.
- Example of second-level categories for waste: waste management, urban and environmental hygiene, staff expenditure, current expenditure.

Figure 6.1. APAT's environmental budget process



Source: Agenzia per la Protezione dell'ambiente e per i Servizi Tecnici (2006[16]), *Il bilancio ambientale del Comune di Venezia*, http://www.apat.it, (accessed on 13 September 2021).

As part of the second step of the methodology, the entire municipal organisation was analysed, including partially or totally owned municipal enterprises, in order to identify the public entity in charge of the management of each field of environmental competence. In the case of Venice, this work confirmed that in some fields, the municipality's direct financial commitments can be quite insignificant compared to the expenditures of the municipal enterprise responsible for that field. It was decided not to include utilities' expenditure in the analysis but rather the financial relationship between the municipality and its utilities.

- Example for waste: waste management and urban and environmental hygiene are managed by the municipal enterprise, VESTA.

The first and second level environmental categories that APAT included in its classification system aligned closely with an internal city of Venice environmental planning document, entitled *rendiconton ambientale 2001-2005*. This report tracked the city's progress towards meeting previously set environmental targets between 2001 and 2005. It was structured in 13 thematic areas within which the city's current objectives, actions and results of their environmental policies were presented. It was published by the municipality of Venice (but is not available online).

- Example of strategic objective for waste: Increase separate collection, discourage the use of "disposable" and start recovery projects and local reuse of waste (edible oils, etc.).

- Example of programmatic objective for the waste management programme: Remove micro-landfills along municipal roads.

Current and capital expenditures were identified for each second level environmental category and linked to each programmatic goal. The existing accounting system used by Italian municipalities in 2004 was exclusively based on the nature of expenditure which made APAT's work was more difficult as additional qualitative data from municipal departments and costs centres had to be sought out in order for expenditure to be linked to programmatic goals.

- Example of waste current expenditure: EUR 9.3 million including EUR 9.2 million of transfers.

The APAT produced examples of efficacy and efficiency indicators that could be used by municipalities; indicators may need to be adapted to match with municipal policies and fields of competences.

- Example of efficiency indicator: indication of the productivity of the intervention in terms of reducing the pressure on the environment: incinerated waste/capital expenditure.
- Example of efficacy indicator: tons of incinerated waste/waste to incinerate.

Methodological and operational difficulties were underlined by APAT

The methodology developed by APAT with Venice highlighted methodological and operational issues, in particular regarding the distribution of expenditure within the environmental classification system. APAT used the city of Venice's 2004 *Rendiconto* (closed administrative account) to experiment with applying the methodology but the functional accounting presentation did not allow for directly identifying environmental expenditure, except for the environmental activities carried out by the municipal Department of Environment. Reclassification of the expenditure was thus necessary but complex due to lack of information on commitments and in some cases because of the heterogeneity of the information available. The possible subjectivity of APAT's classification system was also underlined.

To address these issues, APAT collaborated closely with municipal personnel to carry out the reclassification. The information available in information technology (IT) management control systems, in particular in the cost-accounting systems, was very valuable to the exercise, especially for the reclassification of current expenditure since it helped individualise responsible directions and cost centres.

The experimentation led to the ISPRA 2009 bilancio ambientale framework

The Venice *Bilancio ambientale* experiment was not internalised by the municipality and consequently not updated after APAT published its report. This highlights the necessity of conducting such kinds of exercises in-house, rather than externalising them, in order to ensure there is adequate internal capacity for the project to continue over time.

In 2009, ISPRA (formerly known as APAT) published operational guidelines for the implementation of environmental reports (*bilancio ambientale*) in order to help municipalities to reach their environmental strategic and operational goals, improve policy coherence, and communicate internally and externally about their achievements.

Nevertheless, environmental reporting practices have not developed comprehensively in Italy. Some municipalities still publish environmental indicator reports (generally associated with social data in socio-environmental reports), however, no example of a practice linking those indicators with budget expenditures was found and no public information shows that these practices have developed since ISPRA published its methodology.

Box 6.3. Synthesis: The city of Venice is at the centre of many environmental initiatives

The municipality of Venice is confronted with several climate and environmental challenges. To overcome them, the municipality is involved in various national and international initiatives such as the Covenant of Mayors and the C40 Cities Network. The city's programmatic documents also incorporate these concerns; for example, Venice is currently reviewing its Sustainable Energy and Climate Plan (SECAP) in order to enhance its concrete actions for climate mitigation and adaptation and, ultimately, align the plan with the city's new target of carbon neutrality by 2050.

Venice also participated in a national pilot programme to develop environmental accounting and reporting which led to the development of a "bilancio ambientale" for the city in 2006 and, in 2009, to national guidelines for the implementation of global environmental reports at the subnational level, published by the Italian environmental protection agency ISPRA (*Istituto Superiore per la Potezione e la Ricerca Ambientale*). Despite a very promising methodology, there is no evidence available that it was followed up on and disseminated to other Italian municipalities.

The municipality showed genuine interest in developing more climate and environmentally focused budgeting processes

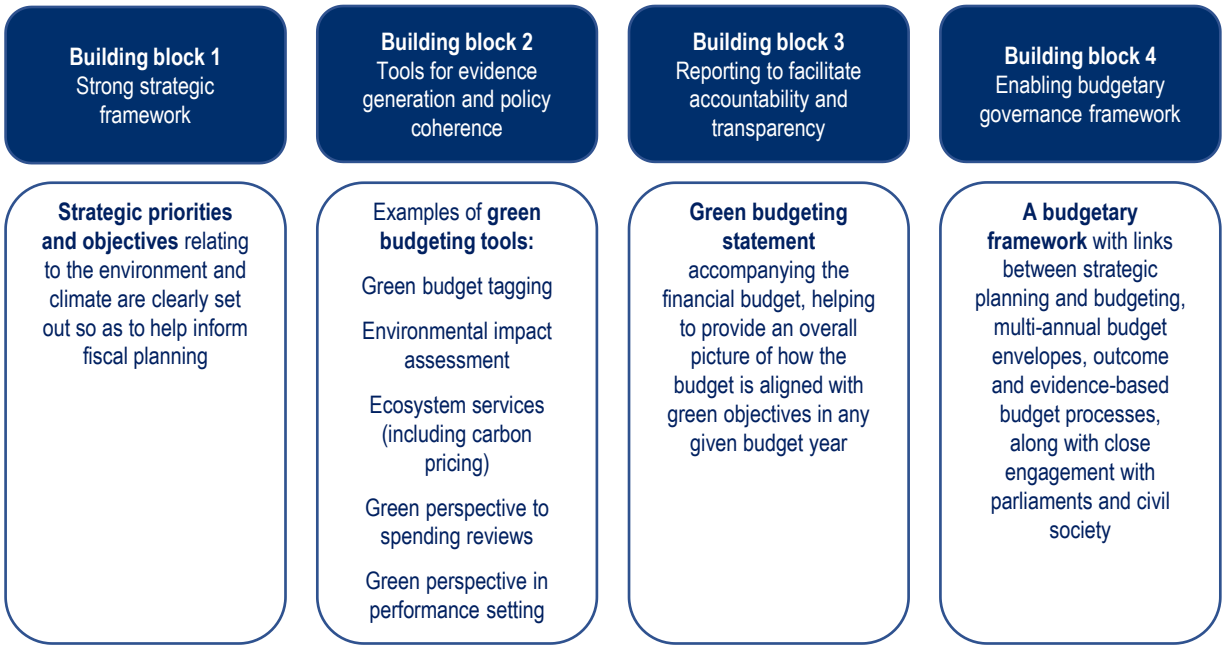
The Paris Collaborative on Green Budgeting (PCGB) defines green budgeting as "using the tools of budgetary policy making to achieve environmental and climate goals" (OECD, 2020[17]). Based on this definition, the PCGB has developed a green budgeting framework composed of four building blocks: institutional arrangements; methods and tools for evidence generation and policy coherence; accountability and transparency; and an enabling environment in budgeting (Figure 6.2). Green budgeting helps policy makers to, among other things:

- Evaluate the coherency of the budget with a region or city's stated environmental and climate objectives, such as those defined in its programmatic documentation; these objectives can relate to climate (mitigation or adaptation) but also to biodiversity, water usage and pollution, air pollution, circular economy, etc.
- Integrate environmental and climate concerns throughout the entire budgetary process: budget construction, authorisation, review and reporting.
- Analyse the trajectory and efficiency of the budget in contributing to achieving a subnational government's green objectives by assigning and following up on environmental and climate indicators.

Green budgeting is a voluntary tool to support decision-making and reporting processes. It is important to note, however, that it is not a silver bullet. For green budgeting to be most effective, a subnational government must define the green budgeting tools to be used, the purpose, the scope, the implementation process, and the usage criteria of its green budgeting practice according to the government's own priorities and budgeting context. Green budgets should also complement a government's other environmental tools such as regulatory action, subsidies or procurement policies and be part of a broader green strategy for a given region of city.

The city of Venice is part of numerous initiatives to help it to better integrate climate and environmental concerns into its regulatory policies and to help the city to align itself with regional, national and international climate commitments. Furthermore, the municipality also showed interest in developing a green budgeting methodology to help achieve these same goals by better linking its financial budgetary procedures with its direct or indirect environmental and climate policies.

Figure 6.2. OECD building blocks for an effective approach to green budgeting



Source: OECD (2020[17]), *Paris Collaborative on Green Budgeting: OECD Green Budgeting Framework*, http://www.oecd.org/environment/green-budgeting/.

The scope of a green budgeting practice can be partial but it must rely on the municipality's environmental and climate programmatic documentation

In Italy, no municipality (or region) has publicly communicated on a systematic and comprehensive green budgeting practice, meaning that it:

- Assesses the impact of the budget on all six climate and environmental domains set out in EU Taxonomy.
- Assesses both positive and negative impacts of expenditures.
- And that includes both expenditure and revenues within the scope of the practice.

It would be extremely demanding to consider implementing all the above-mentioned elements of a green budgeting strategy simultaneously. A phased approach, both in terms of the environmental and climate concerns covered and in terms of the use of green budgeting tools and processes, could be a suitable solution (see Guideline 4 of the OECD Subnational Green Budgeting Guidelines).

Implementing green budgeting procedures can be a step-by-step project

There have been several interesting environmental reporting methodologies developed in Italy in the past few decades, including Venice's 2006 *bilancio ambientale,* the methodology subsequently developed by ISPRA, as well as the CLEAR methodology (see Chapter 3). None of these methods, however, seem to have been comprehensively adopted by municipalities following their initial release. Some of the municipalities involved in the CLEAR methodology publish *bilanci ambientale* (environmental reports) but those reports merely include physical environmental indicators that are not linked with budget practices, and only three municipalities published documentation related to CLEAR in the four years. Venice's last *bilancio socio-ambientale* (socio-environmental report) covers the 2012-14 period; it summarised the municipality objectives for the three-year period and the corresponding achievements and expenditure.

Current subnational green budgeting practices in France, which mainly consist of a line-by-line assessment of the climate impact of budget expenditures, have been briefly presented to Venice by the OECD and generated a high level of interest. If Venice were to adopt a similar approach, it would face the same key methodological encountered by French municipalities. Such challenges include the lack of availability of qualitative information, in particular for transfer expenditures, as well as the need to define the scientific hypotheses to be used to classify the climate impact of each budget line. This approach remains an interesting example for Venice and budget tagging could be retained as a first step by the municipality when developing its own green budgeting practice.

Prior to launching its green budgeting practice, Venice needs to define the scope of the practice and the first steps to implement it. The previous Italian environmental reporting experiences can be used as a starting point. Budget tagging could be an interesting first step since it does not initially imply major changes in terms of organisation or tools for the municipality. It must also be underlined that the French climate tagging methodology is well documented and widely shared, which facilitates its adoption by other interested municipalities.

Box 6.4. Green budgeting tools for evidence generation

A large set of tools and practices are available to incorporate a green perspective into budget processes, both at national and subnational levels. The first step in green budgeting is to gather evidence on how climate and environmental impacts and objectives are taken into account in the budgetary decision-making process. The following is a non-exhaustive list of green budgeting tools that can be used to generate evidence about the climate and environmental impact of expenditure and revenues:

- **Green budget tagging**: a method of classifying budget expenditure according to its environmental and/or climate impact. This tool is widely used in France (for tagging climate expenditure) among regions, departments, and municipalities.
- **Environmental or climate impact assessments:** can be applied to individual budget programmes, measures, or even to the entire budget itself, and can vary with regards to the scope from purely carbon dioxide emissions to biodiversity impacts as well. Methodologies have been developing over the last decade at both the national and subnational levels.
- **Ecosystem services pricing (including carbon pricing):** putting a price on environmental externalities, such as greenhouse gas emissions, often through taxes and emissions trading systems, to facilitate achievement of environmental and climate goals. According to the World Bank's Carbon Pricing Leadership Coalition, 27 subnational governments (including cities, states and regions) are using carbon pricing through emissions trading system or carbon taxes.
- **Adding a green perspective to spending reviews**: Green spending reviews consider the extent to which ministries and governmental agencies can transition to net-zero emissions and environmentally sustainable operations. Similarly, some governments carry out reviews of their environmentally harmful subsidies and tax expenditures, although this seems to be less developed among subnational governments.
- **Adding a green perspective in performance setting:** when performance budgeting is used, this involves integrating performance objectives related to regional or local environmental and climate goals.

Source: OECD (2020[17]), *Paris Collaborative on Green Budgeting: OECD Green Budgeting Framework*, http://www.oecd.org/environment/green-budgeting/; OECD (2020[18]), *Inventory of Building Blocks and Country Practices for Green Budgeting: The OECD Framework for Green Budgeting*, OECD, Paris.

Green budgeting processes must rely on a municipality's environmental and climate programmatic documentation and targets

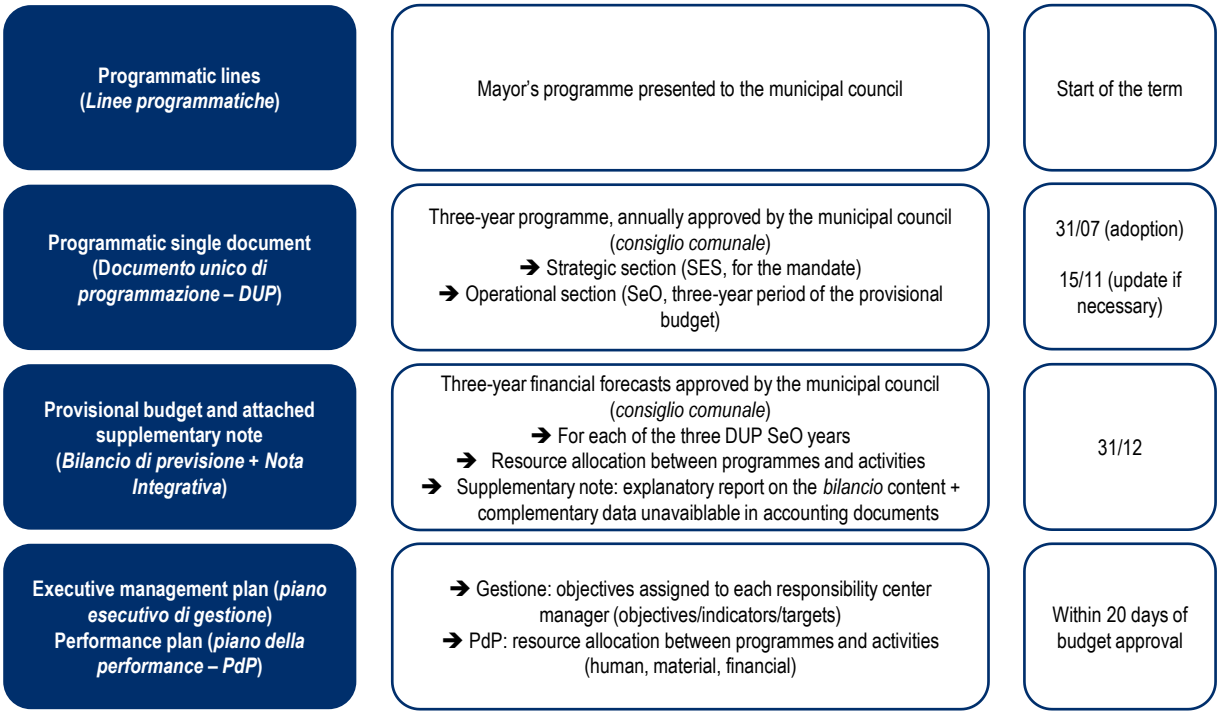
The city of Venice's strategic objectives in terms of sustainable development and protection of the environment are summarised in Mission 9[11] of its single programming document (DUP), and include four operational objectives valid for a three-year period. These objectives are also detailed in municipal action plans, such as the executive management plan and its attached performance plan.

The municipality's climate objectives, covering both mitigation and adaptation actions, are presented in the Sustainable Energy and Climate Action Plan (SECAP), reviewed in 2021, which gives a roadmap for the municipality to achieve carbon neutrality by 2050.

Tagging the climate impact of expenditure and revenue would help Venice to estimate the contribution of its budget to the achievement of its climate and environmental targets set out in its DUP, SECAP, and other programmatic documentation. For instance, the municipality may question the coherency of each expenditure item with its 2050 carbon-neutrality goal and with its 2030 intermediary target. Likewise, an analysis of the existence of climate adaptation measures consistent with Venice climate risk and vulnerability assessment (an evaluation carried out by the municipality with the support of CO.RI.LA, a consortium for co-ordination of research activities concerning the Venice lagoon system) could also be checked.

The first step for Venice in developing its own green budget practice is thus to define the environmental and climate priorities to be measured and the key performance and follow-up indicators to be monitored. A step-by-step green budgeting methodology that gradually expands to include all of the municipality's various environmental and climate objectives is a realistic solution. Given the municipality's acute vulnerability to climate change, it is foreseeable that Venice's green budgeting practice initially focuses on climate adaptation and mitigation concerns.

Figure 6.3. Municipal budget programme documentation



Source: Servizio programmazione e controllo di gestione (2020[19]), *Relazione sulla performance e referto del controllo di gestione 2020*, Servizio programmazione e controllo di gestione, Citta' di Venezia.

An official project launch at a high political and administrative level gives the necessary priority to a green budgeting project

At this point in time, Venice has not implemented any green budgeting practices. Formally launching such a practice needs confirmed support from both political and administrative officials to bring the necessary impetus to the project and allow personnel to free up the necessary time and resources to work on the project.

An official start, including the validation of a project organisation report by the local political authority and an internal and external high-level communication is needed to give the necessary priority to the project.

The project organisation report should include information on:

- The project scope: what is expected from green budgeting, which tools would be used, what perimeter (the entire budget or just certain departments; capital and operating expenditure, or just one; etc.), and green domains would be covered;
- Who will lead the project at both the political and administrative levels;
- An implementation roadmap outlining the main stages of the project and timeline for implementing them.
- The team in charge of defining and implementing the green budgeting procedure, including a first estimate of the expected workload.
- Who the operational teams will report to on the project's progress and submit any questions regarding methodological and technical issues that may arise?

Political responsibility can be a direct prerogative of the mayor or the official in charge of environmental and climate issues, but in either case the representative in charge of the budget must also be directly involved and a real stakeholder in the organisation and validation process. An analysis of existing subnational green budgeting practices identified in the stocktake in Chapter 3, showed that the technical manager of a green budgeting practice can be either an administration's general manager or a joint task shared between the high-level personnel from the departments of environment and budget.

Venice indicated that the project could be promoted by the counsellor in charge of the environment and co-ordinated by the Director of Territorial Development and Sustainability as project leader. With a strong political mandate, the project leader would be in position to ensure the transversal collaboration of all municipal departments to be involved in the project.

Green budgeting needs the widespread involvement of municipal department personnel

When this case study was proposed to the municipality by the OECD, city officials at both the political and administrative level expressed real interest in developing a green budgeting practice. Key administrative officials from various departments including the budget, mobility, public works, and environment departments, have been involved in the strategic reflections on green budgeting opportunities, under the supervision of the municipal counsellor in charge of the environment, urban planning and private construction.

The budget and environment departments are essential to a green budgeting practice

In light of the financial and organisational constraints the municipality already faces, which have been exacerbated by the response to the COVID-19 pandemic, there is a need for any green budgeting exercise to have a light project organisational structure that does not create a significant additional burden on staff, particularly those in the budget department. The green budgeting experiences conducted in other countries, especially in France, showed that, at least for the early stages of the project, transversal working

groups limit the individual additional burden and help to spread awareness of environmental and climate issues among different administrative departments.

Although though various administrative departments are called upon to manage environmental and climate issues, and must therefore participate in the green budgeting approach, the strong involvement of the Department of Environment remains necessary as well as that of the Budget Department and the management control team. One-off assistance, such as trainees or consulting services, can be considered, however, a green budgeting practice needs to be internalised to last over time and to contribute to ensuring internal personnel have the capacity and know-how to integrate climate and environmental issues into budgeting procedures.

An important consideration for Venice in developing its own green budgeting practice is the human and financial cost of such a project. However, no precise public evaluation of the workload is available and such a calculation might not be relevant since it depends on the project scope, on the data availability and the external methodological support that can be found (such as I4CE in France). The municipality thus has to make its own calculation and adjust the project initial scope to its internal and external available means

In this regard, insights can be drawn from other subnational green budgeting practices. For instance, in France, the region of Brittany's first assessment of the climate adaptation and mitigation impact of its 2020 closed financial accounts consisted of analysing approximately 27 000 budgetary lines. An initial analysis of the closed accounts took approximately six months; however, the region estimates that nine months were needed to construct a robust methodology. A team of 12 people, including six trainees working full time under the supervision of six main operating managers (including finance and environment), carried out the initial analysis. More information on Brittany's green budgeting practice is presented as a case study in Chapter 5 of this report.

Another example includes the municipality of Paris, which developed its green budgeting practice in collaboration with the think tank I4CE. A project team primarily made up of staff from the Department of Finance, piloted the climate budget tagging methodology on the city's 2019 closed accounts. To enlarge the scope of the project to the mandate multiannual investment plan, the government departments (specifically financial correspondents, those who work in a department but liaise with the Department of Finance) have been solicited (through training actions and temporary working groups) to validate or complement the project team works.

The municipality of Venice has indicated that, considering the current workload of their internal personnel, it would be essential for them to have external support to launch a green budgeting exercise and that they would therefore also need to find financing for the project.

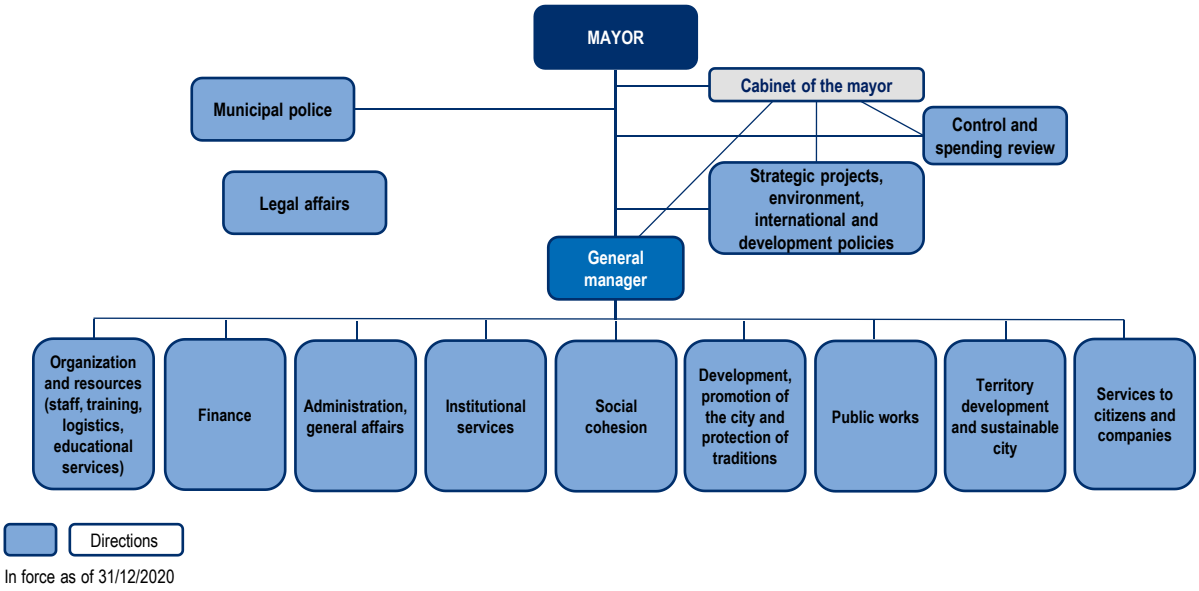
Main operational teams in term of expenditure can help developing a green budgeting methodology

Municipal departments whose policy areas indirectly or directly relate to the environment (i.e. city parks, transportation, or urban planning) as well as those departments that represent a significant portion of city expenditure should be involved in Venice's green budgeting project. Identifying all these departments and ensuring they are included first requires analysing the municipality's main expenditure flows.

In 2020, Venice's total expenditure amounted to EUR 710 million, of which approximately 80% was current expenditure and 20% capital expenditure (Citta' Di Venezia, 2020[20]). This distribution is comparable to previous years despite a 4,6% decrease in expenditure between 2019 and 2020, due to the COVID-19 pandemic. Moreover, this distribution shows the necessity of including current expenditure, and not just capital expenditure, within the scope of an analysis of the climate and environmental impact of expenditure. Ready-made classification methodologies are less developed for current expenditure.

Municipal accounting and reporting systems give detailed information on Venice's expenditure that can be analysed by nature (personnel, taxes, goods and services), by department (see Figure 6.4 for the municipal organisational chart), by budget missions (health, justice, transportation, etc.) and cost centres. Detailed expenditure information can also be gathered through budget programme descriptions and individual management objectives that are attributed to each department director. Some environmental and climate-related programmes and objectives are attached to Mission 9 (sustainable development, protection of the territory and the environment) while others are managed by other departments and through other missions. Crossing these different entry points provides interesting information on the destination of an expenditure item.

Figure 6.4. Municipality of Venice organisational chart



Source: Servizio programmazione e controllo di gestione (2020[19]), *Relazione sulla performance e referto del controllo di gestione 2020*, Servizio programmazione e controllo di gestione, Citta' di Venezia.

It should be noted that since 2018, Venice has implemented a new management software (SGOV, management system for objectives and evaluations) which has enabled better data cross-referencing by integrating the entire financial cycle (programming-reporting-evaluation of objectives) into a single IT interface. The municipality's accounting software is also being replaced.

A breakdown of Venice's 2020 current expenditure by nature shows that about 63% of it concerns the acquisition of goods and services which are fees that mainly benefit the casino (despite a huge decrease in 2020 due to the pandemic) and the transportation and waste services (Box 6.5). Another 19% is related to staff expenditure (Figure 6.5).

Box 6.5. The City of Venice Group

In 2020, Venice had direct or indirect control over 20 companies which formed, together with the city, the City of Venice Group. Three groups makeup the larger municipal group:

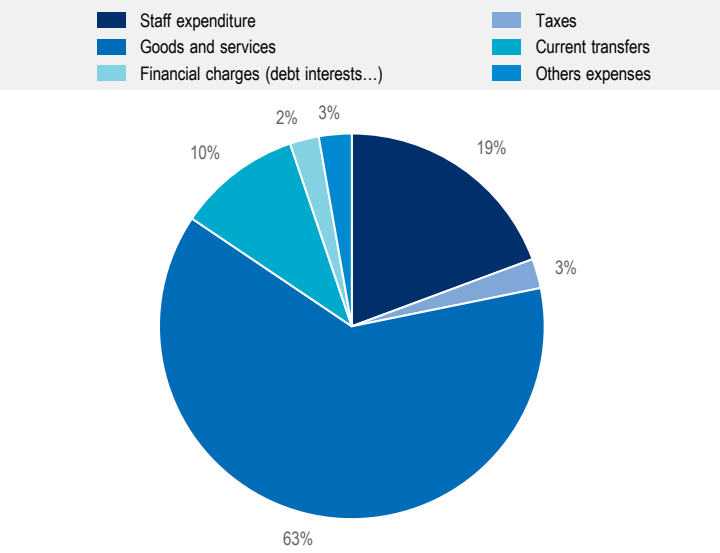
- The mobility group with AVM S.p.A (100% controlled by the city of Venice) which controls Actv S.p.A. (public transport) and Vela S.p.A. (tourism promotion of the city).

- The casino group with CMV S.p.A. (100% controlled by the city of Venice) which has full control over the Casino di Venezia Gioco S.p.A. (casino management and related activities).
- The Veritas S.p.A. group with Veritas S.p.A. as the main company and several controlled entities operating in water services, waste management, and other complementary services.

Other companies, directly controlled by the municipality are contractors for services such as the management of municipal pharmacies, school catering, information systems, and more.

Source: Citta' Di Venezia (2020[21]), "Relazione sulla performance 2020".

Figure 6.5. Breakdown of Venice's current expenditure: 2020



Source: Citta' Di Venezia (2020[21]), *Rendiconto 2020, analisi dei dati economico finanziari*, http://www.comune.venezia.it, (accessed on 15 September 2021).

Three-quarters of current expenditure falls under four departments: the Department of Strategic Projects, Sustainable Development, Environment, and International Policy, the Department of General Resources (which includes human resources and educational services), the Department of Citizen and Business Services, and the Department of Finance (Citta' Di Venezia, 2020[20]).

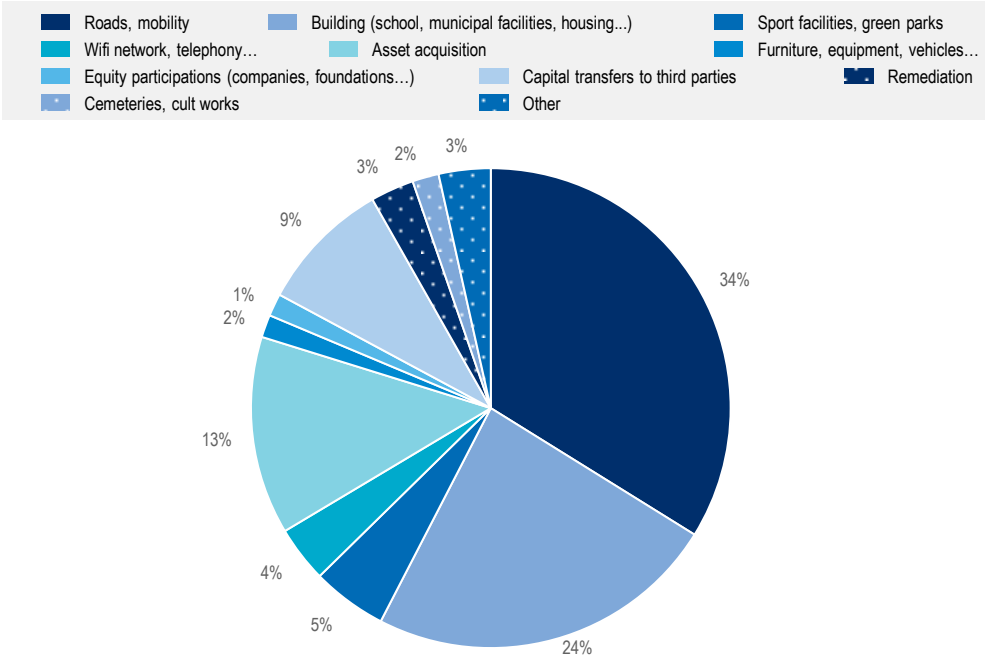
Capital expenditure includes assets acquisition (3.5%), debt capital repayment (4.8%), and equipment (greater than 90%) (Figure 6.6). One-third of equipment expenditure concerns roads and mobility while about a quarter concerns buildings and 13% concerns asset acquisition (Citta' Di Venezia, 2020[20]).

The Public Works Department accounted for more than half of Venice's capital expenditure in 2020 while the Department of Administrative Services and General Affairs accounted for 13%.

When appointing a team to develop and implement green budgeting, Venice should ensure that its makeup mirrors the broad distribution of expenditure across municipal departments, cost centres, and activities in order to be sure to include personnel who best understand and can define the impact of the municipality's expenditure. The municipality mentioned that the Director of Territorial Development and Sustainable City could be the green budget project co-ordinator and with the support of an external consultant, they could define a transversal working group composed of personnel from the budget, environment, urban planning, public works and mobility departments.

The technical database aspect of the project linked to the collection and processing of budget data should not be neglected either.

Figure 6.6. Breakdown of Venice's capital expenditure in 2020



Source: Citta' Di Venezia (2020[21]), *Rendiconto 2020, analisi dei dati economico finanziari*, http://www.comune.venezia.it (accessed on 15 September 2021).

The project schedule depends on the project's scope and first steps

At the national government level, the two most common green budgeting tools are green budget tagging and *ex ante* environmental cost-benefit analyses (OECD, 2021[22]). The stocktake carried out in Chapter 3 of this report is a first attempt at understanding what green budgeting tools are commonly used by subnational governments. Given the large number of subnational governments in the OECD and EU alone, this is a complex task and the results of the stocktake remain non-exhaustive. However, it is possible to discern that green budget tagging, environmental expenditure reviews, and environmental and climate cost-benefit analyses are green budgeting tools commonly used at the subnational level. However, it seems that the most common green budgeting practices are also budget tagging, sometimes limited to investment plans tagging (favourable and harmful expenditure), environmental expenditure reviews and investment cost-benefit analysis. Most existing subnational green budgeting practices focus on analysing the climate adaptation and mitigation impact of the budgets, and analyses of other environmental impacts (e.g. biodiversity, water and air pollution) remain limited for the moment.

Green budgeting should gradually cover the complete budget process

Green budget tagging or other evidence generating tools can be applied to draft budgets and investment plans (*ex ante*) as well as to closed accounts (*ex post*). However, as green budgeting is a decision-making tool, it is particularly useful when used *ex ante*, for example in preparing annual or multi-annual budget forecasts (for instance on the *bilancio di previsione*).[12]

Green budgeting can also be applied to closed accounts (for instance on the *rendiconto sulla gestione*) to measure the progress being made towards achieving the municipality's green commitments. An analysis of favourable and unfavourable expenditure within closed accounts can be used to develop a preliminary methodology that can then be extended to include the draft budget and investment forecasts.

Ideally, a green budgeting practice should cover expenditure and revenues, and apply to both current and capital expenditure. In some existing green budgeting practices, to simplify the initial stages of the project, an expenditure threshold was used for the analysis to reduce the number of budget lines that needed to be examined. Furthermore, as mentioned previously, many existing practices do not include revenues in their initial green budgeting practice as they are more complex to analyse and there is limited existing documentation on how to do so.

Venice could consider starting its green budgeting by analysing the draft municipal budget and Executive Management Plan (*piano esecutivo di gestione*), which sets out the financial resources that are assigned to managers. This plan is more granular than the draft budget and helps with understanding it.

The definition of a realistic timeline depends on the available means

To launch a green budgeting practice, an appropriate timeline must be defined. Given that green budgeting inherently requires significant engagement from the budget department, it would be very challenging for them if a green budgeting process directly overlaps with the regular budgetary process. In this regard, Venice informed the OECD that an eventual green budgeting practice could not start during the budget approval period which takes place during the last quarter of the year.

In the event that Venice chooses to use green budget tagging as part of its green budgeting practice, a choice should be made as to whether the methodology should be developed on the 2021 *rendiconto sulla gestione* (closed accounts) or on the 2023 *bilancio di previsione* (draft budget). The experiences of other municipalities (especially in France) showed that an initial budgetary analysis using green budget tagging can be realised in a relatively short period – about six months at most from the project launch to the release of a green budget. It is important to note that these French experiences mainly focused on climate budget tagging, which is just one possible step in a green budgeting process. Moreover, French subnational governments also benefited from having budget tagging methodological guides available to them, including one developed for the national government budget and one developed specifically for municipal budgets.

The municipality of Venice expressed interest in developing a green budget tagging methodology to apply to its three-year draft budget.

Revenues are usually set aside in the first stages of a subnational green budgeting approach

Among existing subnational green budgeting experiences, revenues are commonly not included within the scope of the practice, considering the generally limited room for manoeuvre that local and regional governments have regarding their revenue source and the difficulty for subnational governments to adjust revenues according to environmental criteria when they are mainly designed to balance their spending responsibilities.

Green revenues can be defined as:

- Revenues (taxes or assimilated such as fees) based on a physical unit that has a proven negative impact on the environment or climate (e.g. energy taxes, transport taxes, pollution taxes). These kinds of revenues normally have an impact on consumer behaviour and their tax bases decrease as the efficiency of the tax improves.

- Revenues that are created or targeted toward the environment or climate-related projects such as green bonds or loans, but also environmental subsidies or special purpose taxes (which have no environmental impact but finance environment or climate-related projects or actions).

Even for local governments with no room for manoeuvre regarding their revenues, a green budgeting process can include a revenue analysis component. This analysis can help them to measure the coherency of their revenues with their environmental policies and the municipality perspectives in that field.

Venice's revenue resources are mainly current revenues

The financial resources Venice needs to cover both its administrative expenses and its expenses for the provision of services to citizens mainly come from current revenues such as taxes or fees (83%). These are complemented by capital revenues (12%) and loans (5%) (Corte di Conti, 2021[23]).

Taxes are Venice's main source of revenue; in particular the IMU[13] and TASI[14] (municipal property taxes which have been merged in January 2020), TARI[15] (a municipal tax financing the cost of waste collection and disposal services), IRPEF[16] (a municipal additional personal income tax), and tourist taxes.

The TARI is the main source of tax revenue for Venice (roughly 30% total tax revenues in 2020) (Citta' Di Venezia, 2020[20]). This tax is managed by the municipal-owned enterprise, Veritas, and finances the costs of waste collection and disposal services. TARI does not include an incentive part; in Italy, municipalities that have put in place systems for measuring the quantity of delivered waste delivered can charge a fee instead of the tax.

IMU-TASI is the second largest source of tax revenues for Venice (about 27%) (Citta' Di Venezia, 2020[20]). Several IMU tax exemptions have environmental purposes in order to promote energy efficiency or anti-seismic building renovation measures, solar panel installations, and electric vehicle charging points.

In normal circumstances, the tourist tax (implemented by Venice in 2011 on tourists' overnight stays) represents more than 10% of Venice's total tax revenues; however, the amount of revenue generated by this tax drastically decreased in 2020 due to the COVID-19 pandemic. In Venice, most tourist visits are day trippers who are not covered by the tourist tax and have reduced consumption in the city, but they generate a large part of the environmental damages or costs incurred by the municipality. Currently, the municipality is considering putting in place an entrance fee, variable according to the number of visitors, that would be requested from tourists and excursionists to ensure the maintenance and safety costs of the historic city and islands. It would be collected by public and private transport companies and repaid to the municipality. The tourists that are staying in Venice, who already pay the tourist tax, would be exempt.

National and regional transfers are the second largest source of municipal revenues in Italy (in particular a part of the national income tax attributed to municipalities). In the case of Venice, about 65% of the transfers it received in 2020 came from the national government (but this amount nearly doubled in 2020 due to extraordinary crisis transfers) and for 34% from the region, to finance local public transport.

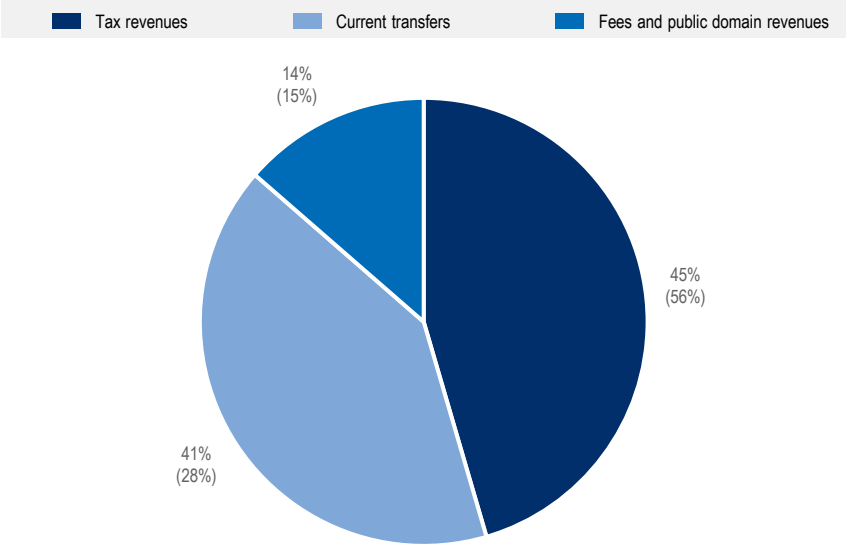
Italian municipalities also generate revenue from public services pricing such as school canteens and buses, sports activities, real estate management (rentals), and fines (traffic violations, building code violations, etc.). In the case of Venice, services and property revenues mainly come from transportation, such as passes for the limited traffic zones and payments from the Venice transportation company. In the years leading up to 2020, the municipality was trying to increase its sources of revenues as well as total revenues by combatting tax evasion recovery and boosting income from marine navigation, transport tickets, and tourist taxes.

Municipalities in Italy can also sell real estate, receive state or regional grants and contributions for investment purposes, and generate income resulting from financial assets sales or debt recovery.

Loans and bond issuances can complement investment revenues. For the last few years, Venice has implemented a debt reduction policy and therefore new borrowing is limited. The main part (67%) of the municipality's outstanding debt is made up of bonds issued on the international market.

The COVID-19 pandemic affected the structure of Italian municipal revenues and the Italian government intervened to safeguard the liquidity of the sectors most affected by the crisis, such as the tourism and hospitality sectors. Local tax exemption measures were introduced and additional resources have been allocated to municipalities to cover their loss of revenue.

Figure 6.7. Venice's structure of current revenues compared to the national average



Note: Percentage in brackets = national average.
Source: Authors' elaboration based on Corte di Conti (2021[23]), *Corte dei Conti, Relazione sulla gestione finanziaria degli enti locali, Comuni, Province e Città metropolitane (national average), Esercizi 2019-2020*.

Environmental taxes might develop in the future at national and local levels

Tax reform is one of the components of the "National Recovery and Resilience Plan" issued in January 2021 by the Italian government. This reform has several stated objectives including to "review the environmental tax system so that it contributes to the goals of Agenda 2030" (Senato della repubblica/Camera dei deputati, 2021[24]). Some changes could occur over the next few years that would specifically concern municipalities, such as a reconfiguration of the TARI in the form of tariffs, which might be considered, thus giving incentives for a more responsible use of public and environmental resources.

The COVID-19 pandemic also had an impact on taxation, since the legislature introduced local tax exemption measures for the sectors most affected by the crisis (in particular, the tourism and hospitality sectors). Resources have been allocated to municipalities to compensate them for the loss of revenues.

Sharing methodologies and practices at the national level enables economies of scale

Environmental and climate concerns should be integrated into Venice's budgeting process in the same way, and at the same time, as the municipality's other concerns, such as economic or social concerns. Green budgeting is thus most successful when it is carried out as an internal procedure to be defined within and by the municipality. But to ensure there is sufficient project buy-in, the city must also rely on recognised

scientific hypotheses,[17] shared green budgeting practices, and all internal and external stakeholders must have knowledge of climate and environmental issues as well as the methodology.

The use of taxonomies helps to create a robust and agreed upon scientific basis

The use of existing sustainable taxonomies to define the scientific hypotheses that underlie a green budgeting practice can help to ensure the objectivity of the exercise and the robustness of the assumptions. It also responds to the necessity of a common language on what constitutes a sustainable activity that positively contributes to achieving environmental and climate objectives. A robust and shared classification system can also help to give the necessary transparency to the green budgeting practice and to better orient financial flows toward green activities.

Several recognised sources of information are available, mainly created, until now, for financial investments or the labelling of green bonds.[18] For instance, the EU Taxonomy for Sustainable Activities classifies activities having a positive contribution to six environmental objectives.[19] The entry point for the taxonomy is the classification of an activity based on economic sector using the NACE system.[20] Although the EU taxonomy is primarily designed for private investors, it can also be useful for subnational governments when analysing, for instance, the destination of their transfer or their equity investments expenditure but also for their own activities since the taxonomy covers important sectors such as transport, water, waste, building.

The EU taxonomy doesn't cover all activities that fall within regional and municipal government competences and in some cases, it is not precise enough to be of direct use, but it is a robust starting point; all the more so since this taxonomy covers six green objectives, includes basic social criteria, integrates transition activities and, as a result, has inspired many national classification initiatives.

Other green budgeting reference documents defined at national or international levels can be used, but they should be based on recognised scientific sources and be publicly available.

Sharing methodologies ensures the robustness and recognition of practices

While working to update its SECAP, Venice identified several potential sources of technical and scientific support, for example through the C40 Connecting Delta Cities (CDC) network[21] and other C40 initiatives, but also on local matters with research groups such as the CORILA[22] consortium. The municipality also identified additional support from EU sources such as the LIFE programme Veneto ADAPT, which encouraged networking between central Veneto metropolitan cities, municipalities and inter-municipal co-operation bodies, in order to develop replicable climate change adaptation methodologies and operational tools. Other methodological support can come from private or public organisations working on climate and environmental issues (universities, think tanks, etc.).

An analysis of existing subnational green budgeting practices showed that green budgeting methodological issues are both complex and relatively similar from one municipality to another. There is therefore a real interest in pooling the work and solutions at the national level, for instance through associations of local and regional elected representatives. In Italy, the National Association of Italian Municipalities (ANCI – *Associazione Nazionale Comuni Italiani*) could be brought on board to help create a national network of municipalities working on green budgeting. Think tanks and academics can also be involved in the process.

Joining a municipal network that is already actively working on disseminating green budgeting or participating in the creation or mobilization of such network could help Venice to launch its own green budgeting project and maintain the practice over time.

Regular training of internal personnel on environmental and climate issues is essential

Green budgeting is a framework to link decision-making to scientific knowledge. It is thus essential to share the objectives and methodology of a green budgeting practice internally with all personnel involved in the budgeting process, both at the decision and implementation levels. This requires having meetings to share knowledge and technical know-how. Working groups can also be helpful, on the one hand to ensure there is a common understanding of the mechanisms and issues and on the other hand so that the procedures put in place are feasible from an operational point of view.

Sharing information and undertaking frequent training sessions are both important steps to take in order to stay up to date with technological and climate science developments and avoid making decisions that could create technological lock-in for the municipality.

Defining a green budgeting method requires a robust validation process

A green budgeting process and methodology must be well-documented to ensure their robustness and their viability over time. The green budgeting approach must also be audited, ideally both externally and internally, periodically to ensure it remains up-to-date. The scientific hypotheses used to classify the impact of expenditure should be reviewed regularly, in light of scientific progress and the evolution of climate risks.

Venice's programming and control department could take charge of the internal auditing process.

Communication on the results is an essential part of a green budgeting process

Both internal and external communication are important aspects of a green budgeting practice. Communication on the results and the methodology are not regulatory requirements as green budgeting is a voluntary approach, but it is crucial to be transparent on the process in order to associate all territorial actors in the process and to credibly show the municipality's trajectory over time.

Box 6.6. Venice's green budgeting methodology is still to be developed

Venice's green budgeting practice is still to be developed by the municipality. The project's scope must be defined to choose which municipal departments, municipal enterprises, and third-party contractors should be included in the process, on what documents the analysis could be carried out, and which environmental and climate axes the municipality will cover. This scope can and should be scalable. A team, made up of at minimum the budget and environment departments must also be formed. The project's schedule will depend on the scope and on the size of the team available to work on the project, but it must be sufficiently ambitious and realistic and it must assume that green budgeting is not a one-off experience but a long-term change in the budget processes.

The methodology must also be specified. To analyse the environmental and climate impact of its expenditure, the municipality should rely on existing taxonomies and try to find support among researchers within think tanks, municipal associations, and universities to combine efforts and give more weight and visibility to the process.

Communication on the methodology and the results of the green budgeting process is very important as green budgeting is the fiscal aspect of a green transition. It goes together with the other issues (economic, social) the municipality must deal with and conflicts of interest may arise. Green budgeting thus includes a territorial analysis of the effects of the green transition on local stakeholders, especially the most vulnerable societal groups.

References

Agenzia per la Protezione dell'ambiente e per i Servizi Tecnici (2006), *Il bilancio ambientale del Comune di Venezia*, http://www.apat.it (accessed on 13 September 2021). [16]

Camera dei deputati (2015), *LEGGE 28 dicembre 2015, n. 221 Disposizioni in materia ambientale per promuovere misure di green economy e per il contenimento dell'uso eccessivo di risorse naturali*. [10]

Camera dei deputati (2009), *Legge del 31 dicembre 2009, n. 196. Legge di contabilità e finanza pubblica*. [5]

Citta' Di Venezia (2020), *Rendiconto 2020, analisi dei dati economico finanziari*, http://www.comune.venezia.it. [20]

Città di Venezia (2020), "Relazione sulla performance 2020". [21]

Corte di Conti (2021), *Corte dei Conti, Relazione sulla gestione finanziaria degli enti locali, Comuni, Province e Città metropolitane (national average), Esercizi 2019-2020*. [23]

EC (2021), *EU Taxonomy for Sustainable Activities*, European Commission, https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance/eu-taxonomy-sustainable-activities_en#regulation. [25]

Eurostat (1994), *SERIEE European System for the Collection of Economic Information on the Environment*, https://ec.europa.eu/eurostat/documents/3859598/5859717/KS-BE-02-002-EN.PDF.pdf/468a0ed9-bdf2-4772-aa21-e04ed45c2f74?t=1414780447000 (accessed on 1 May 2022). [7]

Italian Parliament (2009), *Law no. 196*. [6]

Ministry of Ecological Transition (2022), *Catalogo dei sussidi ambientalmente dannosi e dei sussidi ambientalmente favorevoli*, https://www.mite.gov.it/pagina/catalogo-sussidi-rassegna-stampa-2022 (accessed on 16 June 2022). [12]

Ministry of Ecological Transition (2018), *Secondo rapporto sullo stato del capitale naturale in Italia*, https://www.mite.gov.it/comunicati/il-secondo-rapporto-sullo-stato-del-capitale-naturale-italia (accessed on 4 May 2022). [13]

Ministry of Economy and Finance (2022), *Ecobilancio dello Stato: Relazione illustrativa al Disegno di Legge di Bilancio 2022-2024*, https://www.rgs.mef.gov.it/VERSIONE-I/attivita_istituzionali/formazione_e_gestione_del_bilancio/bilancio_di_previsione/ecobilancio/ (accessed on 4 May 2022). [2]

Ministry of Economy and Finance (2021), *Ecorendiconto - Anno 2020*, https://www.rgs.mef.gov.it/VERSIONE-I/attivita_istituzionali/formazione_e_gestione_del_bilancio/rendiconto/ecorendiconto/ (accessed on 4 May 2022). [3]

Ministry of Economy and Finance (2020), *Ecobilancio-dello-Stato-2021*, https://www.rgs.mef.gov.it/VERSIONE-I/attivita_istituzionali/formazione_e_gestione_del_bilancio/bilancio_di_previsione/ecobilancio/2021/index.html (accessed on 4 May 2022). [9]

Ministry of Economy and Finance (2016), *Ecobilancio - 2017-2019*, https://www.rgs.mef.gov.it/VERSIONE-I/attivita_istituzionali/formazione_e_gestione_del_bilancio/bilancio_di_previsione/ecobilancio/2017/index.html (accessed on 4 May 2022). [4]

Ministry of Economy and Finance (2011), *Allegato 1*. [8]

OECD (2021), *Green Budgeting in OECD Countries*, OECD Publishing, Paris, https://doi.org/10.1787/acf5d047-en. [1]

OECD (2021), *Green Budgeting in OECD Countries*, OECD Publishing, Paris, https://doi.org/10.1787/acf5d047-en (accessed on 4 May 2022). [22]

OECD (2020), *Inventory of Building Blocks and Country Practices for Green Budgeting: The OECD Framework for Green Budgeting*, OECD, Paris. [18]

OECD (2020), *Paris Collaborative on Green Budgeting: OECD Green Budgeting Framework*, OECD, Paris, http://www.oecd.org/environment/green-budgeting/. [17]

OECD (2013), *Analysing Energy Subsidies*, OECD, Paris, http://www.oecd.org/env/eap. [11]

Regione autonoma de Sardegna (2020), *Ecobilancio della Regione Sardegna*, https://www.regione.sardegna.it/j/v/2592?&s=1&v=9&c=10803&n=10&nodesc=1 (accessed on 4 May 2022). [14]

Regione de Veneto (2021), *Deliberazione dela Giunta Regionale n. 278 del 12 marzo 2021*, Giunta Regionale - Regione de Veneto. [15]

Senato della repubblica/Camera dei deputati (2021), *Taxation in Italy: An Overview*. [24]

Servizio programmazione e controllo di gestione (2020), *Relazione sulla performance e referto del controllo di gestione 2020*, Servizio programmazione e controllo di gestione, Citta' di Venezia. [19]

Notes

[1] The Paris Collaborative on Green Budgeting was launched in 2017, by the OECD and the governments of France and Mexico during the One Planet Summit. The PCGB develops concrete and practical guidance to help governments at all levels embed their climate and environmental goals within their budget frameworks.

[2] SEREE is an environmental accounting developed by Eurostat in 1994. This model aims to determine, define and quantify the economic actions undertaken by a community to protect the environment. The SERIEE provides data on environmental expenditure, on the actors and sectors that make this expenditure and on the outputs of the activities aimed at protecting environment (Eurostat, 1994[7]).

[3] A subsidy is a measure that keeps consumers prices below market levels, keeps prices for producers above market levels or reduces costs for producers and consumers, through direct or indirect support.

[4] OECD methodologies such as Quickscan (developed in 1998, a tool designed to help policy makers to identify and explore alternatives to solve problems), Checklist (developed between 2003 and 2005, an integrated assessment tool), Integrated framework assessment (2007), Driving Force-Pressure-Sate-Impact-Response; Environmentally Harmful Subsidies reform tool (2009) for the European Commission.

[5] LIFE programme is the EU's funding instrument for the environment and climate actions through annual calls for proposals.

[6] The municipalities of Ferrara (project lead), Bergeggi, Castelnovo ne' Monti, Cavriago, Grosseto, Modena, Pavia, Ravenna, Reggio Emilia, Rovigo, Salsomaggiore, Varese Ligure and the provinces of Bologna, Ferrara, Reggio Emilia, Modena, Naples and Turin.

[7] UNESCO changed its position after the municipality prohibited the largest and most polluting boats to enter the Saint-Marc basin and canal as well as the Giudecca canal. These boats will have to moor in the industrial port of Marghera, where new infrastructure is being developed.

[8] The Joint Research Centre (JRC) is the European Commission's science and knowledge service. The JRC employs scientists to carry out research in order to provide independent scientific advice and support to EU policy.

[9] SECAPs are the new version of SEAPs, to incorporate climate change considerations.

[10] APAT (*Agenzi per la protezione dell ambiente e per iservizi tecnici*) was the Italian Environment Protection and Technical Services public agency. It has been replaced (together with other environmental public bodies) by the Italian Institute for Environmental Protection and Research ISPRA (*Istituto Superiore per la Potezione e la Ricerca Ambientale*) in 2008. The Institute acts under the vigilance and policy guidance of the Italian Ministry for the Environment and the Protection of Land and Sea (*Ministero dell'Ambiente e della Tutela del Territorio e del Mare*).

[11] Mission 9 covers sustainable development and protection of the territory and the environment.

[12] *Bilancio de previsione* refers to a prevision and authorisation of the municipality's expenditure and revenues for the coming year.

[13] IMU: *Imposta Municipale Propria* (Unique municipal tax).

[14] TASI: *Tributo per i Servizi Indivisibili* (Tax for indivisible services).

[15] TARI: *Tassa sui rifiuti* (waste tax).

[16] IRPEF: *Imposta sul reddito delle persone fisiche* (personal income tax).

[17] The hypothesis used to assess whether an expenditure is favorable or unfavorable to a given environmental or climate objective.

[18] For instance, the Climate Bonds Initiative published a taxonomy of climate aligned assets and projects a tool for issuers, investors, governments and municipalities to help them understand what key investments can deliver a low carbon economy.

[19] The six environmental objectives of the EU taxonomy are: climate change mitigation, climate change adaptation, sustainable use and protection of water and marine resources, transition to a circular economy, waste prevention and recycling, pollution prevention and control, and protection of healthy ecosystems (EC, 2021[25]).

[20] NACE is the "statistical classification of economic activities in the European Community" and stands for "*Nomenclature statistique des activités économiques dans la Communauté européenne"*

[21] CDC is a network of delta cities active in the field of climate change related spatial development, water management, and adaptation, in order to exchange knowledge on climate adaptation and share best practices that can support cities in developing their adaptation strategies. The purpose of the network is to share innovative adaptation among its members.

[22] CORILA: *Consorzio per il Coordinamento delle Ricerche Inerenti al Sistema Lagunare di Venezia* (consortium for co-ordination of research activities concerning the Venice lagoon system).

Annex A. Self-assessment tool

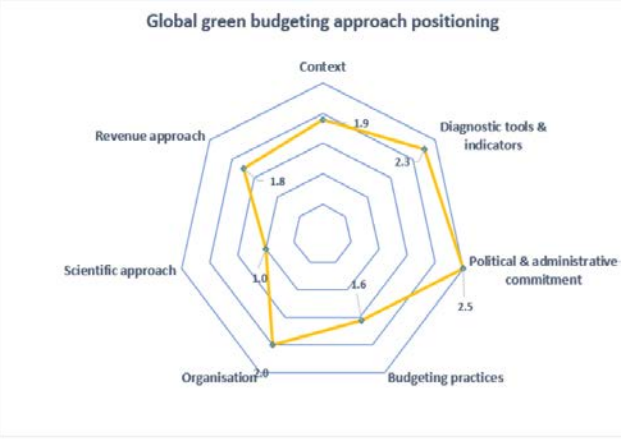
This self-assessment tool (SAT) has been developed in the framework of the joint OECD and European Commission (DG REGIO) project Measuring and Enhancing Subnational Government Finance for Environment and Climate Action in OECD and EU Countries. The SAT tool is available as a downloadable Excel file on the Subnational Green Budgeting page (https://www.oecd.org/regional/snggreenbudgeting.htm) of the OECD's Subnational Government Climate Finance Hub (https://www.oecd.org/regional/sngclimatefinancehub.htm).

This SAT was designed to assist any region or city in identifying its strengths and potential gaps for starting a green budgeting practice or improving an existing one. It was developed based on the findings of the stocktake (Chapter 3) and two case studies (Chapters 5 and 6) and is directly linked to the subnational green budgeting guidelines presented in Chapter 4.

The SAT allows the user to evaluate where they stand across seven green budgeting dimensions. For each dimension, there is a series of sub-criteria against which the user ranks their level of experience ranging from "advanced" to "none". The answers are given for each sub-criteria translate to a numerical score between 0 and 3, which is then combined to produce an average score for each of the seven dimensions. On the "Synthesis & General Information" tab, the user can then see a visualisation of their average scores for all seven dimensions, allowing them to identify their strengths and gaps with respect to green budgeting in a user-friendly format.

Figure A A.1. Self-assessment tool: Global visualisation of strengths and gaps

	Maturity level
Context	1.9
Diagnostic tools & indicators	2.3
Political & administrative commitment	2.5
Budgeting practices	1.6
Organisation	2.0
Scientific approach	1.0
Revenue approach	1.8



In total, the SAT has 11 tabs: a user guide, a description of the ranking scale and accompanying numerical score, a reference guide listing existing subnational green budgeting practices, a synthesis tab which presents the overall visualisation for the user, and finally 7 tabs corresponding to the seven green budgeting dimensions. The seven green budgeting dimensions are:

1. **Context:** this dimension allows the user to evaluate their respective national green budgeting context in order to understand whether they can benefit from an enabling environment to develop their own green budgeting practice. National government policy on green budgeting and the

existence of other initiatives at a local or regional level can create a favourable context for subnational governments to develop their own practices through experience sharing, exchanges, and pooling of methodologies and tools.

2. **Diagnostic tools and indicators:** this dimension helps the user to analyse the tools and support available to them to carry out an environmental and climate diagnosis for their territory and subsequently to prepare an action plan or strategy that includes measurable green objectives and performance indicators.
3. **Political and administrative commitment:** this dimension allows the user to evaluate the existing level of political and administrative commitment to green budgeting within their respective administration. Such a commitment is necessary to ensure the success and longevity of a green budgeting practice.
4. **Budgeting practices:** this dimension allows the user to evaluate how advanced and rigorous their green budgeting procedures are and provides focus areas for improvement. The analysis looks at what existing green budgeting tools and methodologies are in place, any linkages between the green budgeting practice and other priority budgeting practices the administration has implemented, and finally, the coherency between the budgetary and non-budgetary tools.
5. **Organisation:** an evaluation of this dimension helps the user to understand how different services/departments of their organisation can mobilise themselves independently and collaboratively to advance, evaluate and spread green budgeting practices at their level and beyond.
6. **Revenue approach:** an evaluation of this dimension provides the user with an understanding of their room to manoeuvre in terms of aligning their revenue streams with their green objectives and accessing additional sources of public and private climate finance. Although subnational governments frequently limited revenue autonomy, they still have a responsibility to work within their limits to adjust their revenue structure to align with their climate and environmental targets. They should therefore perform a global analysis of the environmental impact of their revenues and financing choices, in order to be able to carry out such an alignment in an informed manner.
7. **Scientific approach:** this dimension allows the user to evaluate the extent to which climate and environmental policy making is grounded in scientific knowledge throughout the administration. It provides the user with an understanding of the current internal practices on knowledge sharing and exchange among personnel, which is essential to deepen existing practices, associate all stakeholders, and improve dissemination of the practice.

OECD Multi-level Governance Studies

Aligning Regional and Local Budgets with Green Objectives

SUBNATIONAL GREEN BUDGETING PRACTICES AND GUIDELINES

Green budgeting is emerging at subnational levels as an important tool for regions and cities to use to align their expenditure and revenues with their green objectives, and enhance the transparency and accountability of their climate and environmental action. It is also a tool that subnational governments can use to prioritise low-carbon investments and identify funding gaps, as well as to mobilise additional sources of both private and public climate finance. In order for subnational governments to make full use of green budgeting however, more methodological, technical, and financial support is needed. This report presents a first stocktake of subnational green budgeting practices in OECD and EU countries as well as a set of guidelines for subnational governments to use in developing and launching a green budgeting practice. It is accompanied by two green budgeting case studies – one with the Region of Brittany (France) and one with the City of Venice (Italy) – and a self-assessment tool. The self-assessment tool allows regions and cities to measure their capacity to launch a green budgeting practice or strengthen an existing one, and is available on the OECD Subnational Government Climate Finance Hub as a downloadable Excel file.

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